COLUMBIA LIBRARIES OFFSITE
HEALTH SCIENCES RESTRICTED
HR01616870

SERIAL
V.8
A
1895

Columbia University
in the City of New York

College of Physicians and Surgeons

Reference Library

Digitized by the Internet Archive
in 2014

https://archive.org/details/transactionsofa8189amer_0

TRANSACTIONS

OF THE

AMERICAN ASSOCIATION

OF

OBSTETRICIANS AND GYNECOLOGISTS.

VOL. VIII.

FOR THE YEAR 1895.

PHILADELPHIA:
WM. J. DORNAN, PRINTER.
1896.

COPYRIGHT, 1896,

BY THE

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

All rights reserved.

NOTE.

THE Association does not hold itself responsible for the views enunciated in the papers and discussions published in this volume.

WILLIAM WARREN POTTER, *Secretary*,
284 FRANKLIN STREET, BUFFALO

[MINUTES and discussions stenographically reported by WILLIAM WHITFORD, Chicago, Ill.]

CONTENTS.

	PAGE
Constitution	3
By-laws	5
Officers for 1895–96	9
List of Honorary Fellows	11
List of Ordinary Fellows	17
Minutes of the Eighth Annual Meeting	33
The President's Annual Address. The Use of Special Societies. By J. H. Carstens, M.D.	47
Suppurating Bilateral Parotitis. By James F. W. Ross, M.D.	52
Intermediate Treatment of Puerperal Sepsis. By A. B. Miller, M.D.	62
The Indications for Operation in Puerperal Sepsis. By Lewis S. McMurtry, M.D.	71
Exceptional Location of the Blood-clot in a Case of Ruptured Ectopic Pregnancy. By Marcus Rosenwasser, M.D.	96
Ruptured Interstitial Pregnancy. By L. H. Dunning, M.D.	107
Intraperitoneal Adhesions. By Ernest T. Tappey, M.D.	115
A Clinical Contribution to the Study of the Lateral Displacements of the Uterus. By Edward J. Ill, M.D.	132
Some of the Advantages of, and Indications for, Vaginal Hystero-salpingo-oöphorectomy in Suppurative Pelvic Disease. By X. O. Werder, M.D.	142
Eclampsia Gravidarum. By F. Blume, M.D.	175
The Prophylactic Treatment of Eclampsia Gravidarum. By H. W. Longyear, M.D.	181
So-called Pueperal Eclampsia in its Relation to Insanity. By W. P. Manton, M.D.	189
Diagnosis of Intra-abdominal Tumors. By A. H. Cordier, M.D.	197
Pneumo-peritoneum. By James F. W. Ross, M.D.	204
The Prevention of Pelvic Inflammation in Women. By Rufus B. Hall, A.M., M.D.	222
Large Hydronephrotic Cyst Simulating Ovarian Tumor; Abdominal Nephrectomy; Recovery. By Herman E. Hayd, M.D.	230
The Limitations of Craniotomy. By William H. Myers, M.D.	239
Three Recent Cases in Gall-bladder Surgery. By Edwin Ricketts, M.D.	250
Operative Procedures for the Relief of Obstruction of the Biliary Ducts. By W. E. B. Davis, M.D.	254

PAGE

The Use and Abuse of the Uterine Curette. By Walter Blackburn Dorsett, M.D. 275

Some Anomalies Found in Abdominal Surgery. By Thomas J. Maxwell, M.D. 285

Should Intrauterine Injections of Glycerin be Used for the Induction of Labor? By B. M. Hypes, M.D. 294

Has Gynecology Received Just Recognition as a Specialty. By Milo Buel Ward, M.D. 303

Kraurosis Vulvæ: A Contribution to its Pathology and Therapeutics. By H. W. Longyear, M.D. 306

Post-climacteric Endometritis. By John Chase Sexton, M.D. . 314

Is So-called Conservatism in Gynecology Conducive of the Best Results to the Patient? By E. Arnold Praeger, M.D. . . . 320

Appendicitis: Suggestions for a More Uniform and Simple Classification to Aid the General Practitioner, with Report of a Few Cases to Illustrate Some of the Points Presented in this Paper. By A. Vander Veer, M.D. 330

Retroversions of the Uterus. By Eugene Boise, M.D. . . . 342

Neurasthenia Accompanying and Simulating Pelvic Disease. By C. C. Frederick, M.D. 351

The Relation of Pelvic Suppuration to Structural Changes that May Occur in the Fallopian Tubes. By Augustus P. Clarke, M.D. 356

Parturial Sepsis. By William B. Dewees, M.D. 362

Treatment of Hyperplastic Conditions of the Uterus. By William A. B. Sellman, M.D. 364

Manual Interference to Correct Certain Undesirable Presentations. By J. F. Baldwin, M.D. 368

Some Reflections on Conditions and Methods Favoring Success in Abdominal Surgery. By Walter B. Chase, M.D. 376

In Memoriam:

Franklin Townsend, Jr., M.D. By A. Vander Veer, M.D. . 383

Jacob Edwin Michael, M.D. By George Henry Rohé, M.D. . 388

Thomas Keith, M.D., F.R.C.S. Ed., LL.D., F.R.S. Ed. By Leith Napier, F.R.S. Ed. 390

L. Ch. Boislinière, A.M., M.D., LL.D. By Frank A. Glasgow, A.M., M.D. 395

Index 399

LIST OF ILLUSTRATIONS.

PAGE

Suppurating bilateral parotitis. (James F. W. Ross.)
Chart and Figs. 1 and 2 52

Intraperitoneal adhesions. (H. W. Longyear.)
Double or multiple partial ligation, Figs 1 and 2 . . . 121

Use and abuse of uterine curette. (Walter Blackburn Dorsett.)
Double-bladed sponge-holder 278

Treatment of hyperplastic conditions of uterus. (William A. B. Sellman.)
Sellman's reamer 365

Portrait of Franklin Townsend, Jr., M.D. 383

Portrait of Jacob Edwin Michael, M.D. 388

Portrait of Thomas Keith, M.D., F.R.C.S. Ed., LL.D., F.R.S. Ed. . 390

Portrait of L. Ch. Boislinière, A.M., M.D., LL.D. 395

ERRATUM.

On page 186, vol. vii., 1894, TRANSACTIONS OF THE AMERICAN ASSOCIATION OF OBTETRICIANS AND GYNECOLOGISTS, the paragraph

"DR. DORSETT.—Yes. Dr. Martin published his case before I published the suggestion," should read

"DR. DORSETT.—Yes. Dr. Martin published his case, but I published the suggestion as well as the technique long before."

CONSTITUTION AND BY-LAWS

OF THE

AMERICAN ASSOCIATION

OF

OBSTETRICIANS AND GYNECOLOGISTS.

AMERICAN ASSOCIATION

OF

OBSTETRICIANS AND GYNECOLOGISTS.

CONSTITUTION.

I. The name of this Association shall be THE AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

II. Its object shall be the cultivation and promotion of knowledge in whatever relates to Abdominal Surgery, Obstetrics, and Gynecology.

MEMBERS.

III. The members of this Association shall consist of Ordinary Fellows, Honorary Fellows, and Corresponding Fellows.

The Ordinary Fellows shall not exceed one hundred and twenty-five in number.

The Honorary Fellows shall not exceed ten American and twenty-five foreign.

Candidates shall be proposed to the Executive Council at least one month before the first day of meeting by two Fellows, and shall be balloted for at the annual meeting, a list of names having been sent to every Fellow with the notification of the meeting.

A two-thirds vote in the affirmative of all the members present shall be necessary to elect—fifteen Fellows at least being in attendance.

All candidates for active fellowship shall submit to the Executive Council, at least one month before the annual meeting, an original paper relating to Abdominal Surgery, Obstetrics, or Gynecology.

HONORARY FELLOWS.

IV. The power of nominating Honorary Fellows shall be vested in the Executive Council.

Their election shall take place in the same manner as that of Ordinary Fellows.

They shall enjoy all the privileges of Ordinary Fellows, excepting to vote or hold office, but shall not be required to pay any fee.

CORRESPONDING FELLOWS.

V. The Corresponding Fellows shall be recommended by the Executive Council, and elected by the Association.

They shall enjoy all the privileges of Ordinary Fellows, excepting to vote or hold office, and shall be entitled to a copy of the annual *Transactions*.

They shall pay an annual fee of five dollars.

OFFICERS.

VI. The officers of this Association shall be a President, two Vice-Presidents, a Secretary, a Treasurer, and five Executive Councillors.

The nomination of all officers shall be made in open session at the business meeting, and the election shall be by ballot.

The officers shall enter upon their duties immediately before the adjournment of the meeting at which they shall be elected, and shall hold office for one year.

Any vacancy occurring during the recess may be filled temporarily by the Executive Council.

ANNUAL MEETINGS.

VII. The time and place of holding the annual meeting shall be determined by the Association or may be committed to the Executive Council each time before adjournment.

It shall continue for three days, unless otherwise ordered by vote of the Association.

AMENDMENTS.

VIII. This Constitution may be amended by a two-thirds vote of all the Fellows present at the annual meeting; *provided* that notice of the proposed amendment shall have been given in writing at the annual meeting next preceding; and *provided further*, that such notice shall have been printed in the notification of the meeting at which the vote is to be taken.

AMERICAN ASSOCIATION

OF

OBSTETRICIANS AND GYNECOLOGISTS.

BY-LAWS.

THE PRESIDING OFFICER.

I. The President, or in his absence one of the Vice-Presidents, shall preside at all meetings, and perform such other duties as ordinarily pertain to the Chair.

The presiding officer shall be *ex-officio* chairman of the Executive Council, but shall vote therein only in case of a tie.

SECRETARY.

II. The Secretary shall attend and keep a record of all meetings of the Association and of the Executive Council, of which latter he shall be *ex-officio* clerk, and shall be entitled to vote therein.

He shall collect all moneys due from the members, and shall pay the same over to the Treasurer, taking his receipt therefor.

He shall supervise and conduct all correspondence of the Association; he shall superintend the publication of the *Transactions* under the direction of the Executive Council, and shall perform all the ordinary duties of his office.

He shall be the custodian of the seal, books, and records of the Association.

TREASURER.

III. The Treasurer shall receive all moneys from the Secretary, pay all bills, and render an account thereof at the annual meetings, when an Auditing Committee shall be appointed to examine his accounts and vouchers.

EXECUTIVE COUNCIL.

IV. The Executive Council shall meet as often as the interests of the Association may require. The President, or any three members, may call a meeting, and a majority shall constitute a quorum.

It shall have the management of the affairs of the Association, subject to the action of the house at its annual meetings.

It shall have control of the publications of the Association, with full power to accept or reject papers or discussions.

It shall have control of the arrangements for the annual meetings, and shall determine the order of the reading of papers.

It shall constitute a court of inquiry for the investigation of all charges against members for offences involving law or honor; and it shall have the sole power of moving the expulsion of any Fellow.

ORDER OF BUSINESS.

V. The Order of Business at the annual meetings of the Association shall be as follows:

1. General meeting at 10 o'clock A.M.
   - *a.* Reports of Committees on Scientific Questions.
   - *b.* Reading of Papers and Discussion of the same.
2. One Business meeting shall be held at half-past nine o'clock A.M. on the first day of the session, and another on the evening of the second day (unless otherwise ordered by vote), at which only the Fellows of the Association shall be present. At these meetings the Secretary's Record shall be read; the Treasurer's Accounts submitted; the Reports of Committees on other than scientific subjects offered; and all Miscellaneous Business transacted.

PAPERS.

VI. The titles of all papers to be read at any annual meeting shall be furnished to the Secretary *not later* than one month before the first day of the meeting.

No paper shall be read before the Association that has already been published, or that has been read before any other body.

Not more than thirty minutes shall be occupied in reading any paper before the Association.

Abstracts of all papers read should be furnished to the Secretary at the meeting.

All papers read before the Association shall become its sole property

if accepted for publication; and the Executive Council may decline to publish any paper not handed to the Secretary *complete* before the final adjournment of the annual meeting.

QUORUM.

VII. The Fellows present shall constitute a quorum for all business, excepting the admission of new Fellows or acting upon amendments to the Constitution, when not less than fifteen Fellows must be present.

DECORUM.

VIII. No remarks reflecting upon the personal or professional character of any Fellow shall be in order at any meeting, except when introduced by the Executive Council.

FINANCE.

IX. Each Fellow on admission shall pay an initiation fee of twenty-five dollars, which shall include his dues for the first year.

Every Fellow shall pay *in advance* (*i. e.*, at the beginning of each fiscal year) the sum of twenty dollars annually thereafter.

[A fiscal year includes the period of time between the first day of one annual meeting and the first day of the next.]

Any Fellow neglecting to pay his annual dues for two years may forfeit his membership, upon vote of the Executive Council.

The Secretary shall receive annually a draft from the President drawn on the Treasurer for a sum, to be fixed by the Executive Council, for the services he shall have rendered the Association during the year.

A contingent fund of one hundred dollars shall be placed annually at the disposal of the Secretary for current expenses, to be disbursed by him, and for which he shall present proper vouchers.

ATTENDANCE.

X. Any Fellow who shall neither attend nor present a paper for three consecutive years, unless he offer a satisfactory excuse, may be dropped from fellowship upon vote of the Executive Council.

RULES.

XI. *Robert's Rules of Order* shall be accepted as a parliamentary guide in the deliberations of the Association.

AMENDMENTS.

XII. These By-laws may be amended by a two-thirds vote of the Fellows present at any meeting; *provided*, previous notice in writing shall have been given at the annual meeting next preceding the one at which the vote is to be taken.

OFFICERS FOR 1895–1896.

PRESIDENT.

JOSEPH PRICE, Philadelphia.

VICE-PRESIDENTS.

ALBERT HAWES CORDIER, Kansas City.
GEORGE SHERMAN PECK, Youngstown, Ohio.

SECRETARY.

WILLIAM WARREN POTTER, Buffalo.

TREASURER.

XAVIER OSWALD WERDER, Pittsburg.

EXECUTIVE COUNCIL.

CHARLES ALFRED LEE REED, Cincinnati.
JAMES FREDERICK WILLIAM ROSS, Toronto.
ALBERT VANDER VEER, Albany.
LEWIS SAMUEL McMURTRY, Louisville.
J. HENRY CARSTENS, Detroit.

HONORARY FELLOWS.

* Deceased.

1889.—Bantock, George Granville, M.D., F.R.C.S. Ed. Surgeon to the Samaritan Free Hospital. 12 Granville Place, Portman Square W., London, England.

1889.—Barbour, A. H. F., M.A., B.S.C., M.D., F.R.C.P.E., F.R.S.E. Lecturer on Midwifery and Diseases of Women in the Edinburgh Medical School; Assistant Physician to the Royal Maternity Hospital; Assistant Physician for Diseases of Women to the Royal Infirmary; Physician to the Women's Dispensary; Fellow of the Edinburgh and London Obstetrical Societies and of the British Gynecological Society; Corresponding Fellow of the Royal Academy of Medicine, Turin. 28 Melville Crescent, Edinburgh, Scotland.

1892.—Boislinière, L. Ch., A.B., M.D., LL.D. Emeritus Professor of Obstetrics in the St. Louis Medical College; Consulting Obstetrician to the St. Ann Lying-in Asylum and St. Louis Female Hospital; late President of the St. Louis Obstetrical and Gynecological Society, and late President of the St. Louis Medical Society; Member of the St. Louis Academy of Science and of the Paris (France) Anthropological Society. 2303 Chestnut Street, St. Louis, Missouri.

1890.—Championnière, Just. Lucas-, M.D. 3 Avenue Montaigne, Paris, France.

1889.—Charpentier, Arthur Louis Alphonse, M.D. Fellow of the Faculty of Medicine of Paris; Member of the Academy of Medicine; and Chevalier of the Legion of Honor. 66 Rue de Miromesnil, Paris, France.

1888.—Cordes, August, Elisée, M.D. Member of the Royal College of Physicians, London; Fellow of the Obstetrical Society of London and of the British Gynecological Society; Corresponding National Member of the Obstetrical and Gynecological Society of Paris; Honorary Fellow of the Detroit Gynecological Society; late "Chirurgien-adjoint" of the Obstetrical and Gynecological Clinic at the Maternity of Geneva; Consulting Accoucheur of the Miséricorde

Hospital, etc ; Perpetual Member of the Société Obstétricale de France, Paris, France. 12 Rue Bellot, Geneva, Switzerland.

1890.—Corson, Hiram, M.D. Honorary Member of the Harrisburg (Pa.) Pathological Society ; Associate Member of the Philadelphia Obstetrical Society ; Associate Fellow of the College of Physicians of Philadelphia, and Permanent Member (President, 1852) of the Pennsylvania Medical Society and of the American Medical Association. Maple Hill, Plymouth Meeting, Pa.

1889.—Croom, J. Halliday, M.D., F.R.C.P.E., F.R.C.S.E., F.R.S.E. Physician to and Clinical Lecturer on Diseases of Women, Royal Infirmary, Edinburgh ; Physician to the Royal Maternity Hospital; Lecturer on Midwifery and the Diseases of Women at the School of Medicine; Consulting Physician for Diseases of Women, Western Dispensary. 25 Charlotte Square, Edinburgh, Scotland.

1889.—*Dunlap, Alexander, A.M., M.D. Springfield, O. 1894.

1888.—*Edis, Arthur Wellesley, M.D. Lond., F.R.C.S., M.R.S.C.S. London, England. 1893.

1889.—Ecklund, Abraham Fredrik, M.D. 3 A. Sibyllegatan, Stockholm, Sweden.

1891.—Fernandez, Juan Santos, M.D. Calle de la Reina, No. 92, Havana, Cuba.

1891.—*Fisher, George Jackson, A.M., M.D. Sing Sing, N. Y. 1893.

1889.—Freund, William Alexander, M.D. Professor and Director of the Clinic for Diseases of Women, in the Emperor William University. 2 Nikolaustaden, Strassburg, Germany.

1892.—Green, Traill, M.D., LL.D. Emeritus Professor of Chemistry in Lafayette College; Member of the American Medical Association ; Member (President, 1867) of the Medical Society of the State of Pennsylvania ; Fellow of the American Association for the Advancement of Science ; Member of the American Philosophical Society ; President of the Section of Therapeutics and Materia Medica, Ninth International Medical Congress ; Consulting Physician to St. Luke's Hospital, Bethlehem ; Physician to the Home for Friendless Children, Easton ; Consulting Surgeon to Easton Hospital ; Ex-President of the American Academy of Medicine. 222 Spring Garden St., Easton, Pa.

1894.—Jacobs, Charles, M.D. Professor of the Faculty of Medicine of Brussels; Secretary-General of the Permanent Committee of the Periodic International Congress of Gynecology and Obstetrics; Vice-President of the Belgian Society of Gynecology and Obstetrics; Surgeon to the Brussels Polyclinic. 53 Boulevard de Waterloo, Brussels, Belgium.

1889.—Keith, Thomas, M.D. 42 Charles Street, Berkeley Square W., London, England.

1889.—Leopold, G., M.D. Professor in the Royal Clinic for Diseases of Women. 12 Seminar-Strasse, Dresden, Germany.

1894.—Maclean, Donald, M.D. President of the American Medical Association 1894. 72 Lafayette Avenue, Detroit, Mich.

1890.—Martin, August, M.D. Alexanderufer 1, Berlin N. W. Germany.

1895.—Mastin, Claudius Henry, M.D., LL.D. Senior Consulting Surgeon, City Hospital, Mobile; Ex-President American Surgical Association; President American Association Genito-Urinary Surgeons; Corresponding Member Boston Gynecological Society; Member of Southern Surgical and Gynecological Association; Honorary Chairman Surgical Section of the First Pan-American Medical Congress, and one of its Trustees; Founder of the Congress of American Physicians and Surgeons. 13 South Joachim Street, Mobile, Ala.

1891.—Moses, Gratz Ashe, M.D. Emeritus Professor of Obstetrics and Gynecology in the Missouri Medical College; formerly in charge of the Woman's Department, St. Louis Hospital, and Clinical Lecturer in Gynecology, St. Louis Medical College; Physician to Augusta Hospital. 3941 West Bell Place, St. Louis, Mo.

1889.—Nicolaysen, Julius, M.D. Professor of Surgery in the University of Norway. Christiania, Norway.

1891.—Pietranera, E., M.D. Professor of Obstetrics in the Medical Department of the National University; Director of the Maternity Branch of the Clinical Hospital. 2711 Calle Rio Adaria, Buenos Ayres, Argentine Republic, S. A.

1891.—Rodriguez, Juan M., M.D. Professor of Clinical Obstetrics in the Medical School of the University of Mexico. Mexico.

1889.—Sänger, Max, M.D. Professor of Obstetrics and Gynecology, University of Leipzig; late President of the Leipzig Obstetrical Society; Honorary Member of the Obstetrical Societies of Philadelphia and Chicago; Honorary Member of the Belgian Gynecological Society, Brussels; Honorary Member of the Gynecological Society, Kiew; Corresponding Member of the Medical Society of Christiania, Norway. 16 Lindenstrasse, Leipzig, Germany.

1894.—Slaviansky, Kronid, M.D. Ordinary Professor of the Obstetrical and Gynecological Clinic at the Imperial Medical Academy; Director of the Lying-in Hospital of Gavan at St. Petersburg; Corresponding Fellow of the Boston Gynecological Society. 24 Liteinaia Street, St. Petersburg, Russia.

1890.—Savage, Thomas, M.D., F.R.C.S. Eng. Surgeon to the Birmingham Hospital for Women. 33 Newhall Street, Birmingham, England.

1889.—Schultze, Bernhard Sigmund, M.D. Professor of Gynecology; Director of the Lying-in Institute and of the Gynecological Clinic. 2 Sellierstrasse, Jena, Germany.

1888.—Smith, J. Greig, M.A., C.M., M.B., F.R.S.E. Surgeon to the Bristol Royal Infirmary; Lecturer on Surgery, Bristol Medical School; Late Examiner in Surgery, University of Aberdeen, Scotland. 16 Victoria Square, Clifton, Bristol, England.

1888.—Tait, Lawson, M.D., LL.D., F.R.C.S.E. Surgeon to the Birmingham and Midland Hospital for Women; Consulting Surgeon to the West Bromwich, the Southamptom, and the Nottingham Hospitals for Women; Professor of Gynecology and Member of the Council in Queen's College; President of Mason's Science College; Ex-President of the British Gynecological Society; President of the Birmingham Medical Institute; Ex-President of the Birmingham and Midland Counties Branch of the British Medical Association; President of the Worcestershire and Herefordshire Branch of the British Medical Association and of the Midland Medical Society. 7 The Crescent, Birmingham, England.

1888.—Williams, John, Bart., M.D., F.R.C.P. 63 Brook Street, Grosvenor Square W., London, England.

1889.—v. Winckel, F., M.D. Professor of Gynecology and Director of the Royal Hospital for Women; Member of the Supreme Council and of the Faculty of Medicine in the University of Munich. 16a Sonnenstrasse, Munich, Germany.

Total, thirty Honorary Fellows.

CORRESPONDING FELLOWS.

1891.—Griffin, Herbert Spohn, B.A., M.D. Surgeon to Hamilton City Hospital; Examiner in Obstetrics, University of Toronto, 157 Main Street, Hamilton, Ontaria, Canada.

1891.—Machell, Henry Thomas, M.D., L.R.C.P. Ed. Lecturer on Obstetrics, Woman's Medical College; Surgeon to St. John's Hospital for Women; Physician to Victoria Hospital for Sick Children and to Hillcrest Convalescent Home. 95 Bellevue Avenue, Toronto, Ontario, Canada.

Total, two Corresponding Fellows.

ORDINARY FELLOWS.

* Deceased.

1893.—Armstrong, Oscar Samuel, M.D. Professor of Gynecology in the Michigan College of Medicine and Surgery, Detroit; Gynecologist to Emergency Hospital; President of Wayne County Medical Society, 1893; Member of the American Medical Association; Member of the Michigan State Medical Society; Member of the Michigan Surgical and Pathological Society; Associate Editor of the *Emergency Hospital Reports.* 399 Third Avenue, Detroit, Mich.

1890.—Asdale, William James, M.D. Professor of Diseases of Women, Western Pennsylvania Medical College, Medical Department University of Western Pennsylvania. 2107 Penn Avenue, Pittsburg, Pa.

1895.—Bacon, Joseph Barnes, M.D. Professor of Rectal Diseases at the Post-Graduate Medical School; Instructor in Clinical Surgery in the Medical Department of Northwestern University. 4125 Drexel Boulevard, Chicago, Ill.

Founder.—Baker, Washington Hopkins, M.D. Senior Obstetrician to the Maternity Hospital; Physician to the German Hospital. 1610 Summer Street, Philadelphia, Pa.

1895.—Baldwin, James Fairchild, A.M., M.D. Chancellor of, and Professor of Surgical Gynecology in, the Ohio Medical University; Gynecologist at the Protestant Hospital. 112 North Fourth Street, Columbus, O.

Founder.—Banta, Rollin Ledrue, M.D. Professor of Materia Medica and Therapeutics in Niagara University Medical College; Consulting Obstetrician to the Sisters of Charity and Woman's Hospitals; President of the Buffalo Obstetrical Society, 1887–'88. *Vice-President,* 1890. *Executive Council,* 1891. 358 South Division Street, Buffalo, N. Y.

1889.—Barrow, David, M.D. Member of the Southern Surgical and Gynecological Association. 196 East High Street, Lexington, Kentucky.

1890.—Bernardy, Eugene Prosper, M.D. 221 South Seventeenth Street, Philadelphia, Pa.

1892.—Blume, Frederick, M.D. Gynecologist to the Allegheny General Hospital and Pittsburg Free Dispensary; Obstetrician to the Roselia Maternity Hospital; Consulting Gynecologist to the Mercy Hospital; President of the Pittsburg Obstetrical Society, 1892. 118 Liberty Street, Allegheny, Pa.

1890.—Bond, Young Hance, M.D. Professor of Gynecology in the Marion-Sims College of Medicine; Consulting Gynecologist to the St. Louis City and to the St. Louis Female Hospitals. 914 North Grand Avenue, St. Louis, Mo.

1893.—Boise, Eugene, A.B., M.D. Gynecologist to St. Mark's Hospital. 23 North Lafayette Street, Grand Rapids, Mich.

Founder.—Boyd, James Peter, A.M., M.D. Professor of Obstetrics, Gynecology, and Diseases of Children in the Albany Medical College; Gynecologist to the Albany Hospital; Consulting Obstetric Surgeon to St. Peter's Hospital; Fellow of the British Gynecological Society. 152 Washington Avenue, Albany, N. Y.

1889.—Branham, Joseph H., M.D. Demonstrator of Anatomy in the College of Physicians and Surgeons; Visiting Surgeon to Bayview Hospital. 538 North Arlington Avenue, Baltimore, Md.

1894.—Brown, John Young, Jr., M.D. First Assistant Physician in the Central Kentucky Asylum for the Insane. Lakeland, Ky.

1889.—*Burns, Bernard, M.D. Allegheny, Pa. 1892.

1891.—Cameron, Irving Heward, M.B. Professor of Clinical Surgery in the University of Toronto; Surgeon to the Toronto General Hospital, to the Hospital for Sick Children, and to St. John's Hospital for Diseases of Women. 307 Sherbourne Street, Toronto, Ont., Canada.

1895.—Chase, Walter Benajah, M.D. Gynecologist to the Bushwick Hospital; Gynecologist at the Eastern District Dispensary and Hospital; Member of the Brooklyn Pathological Society; Permanent Member of the Medical Society of the State of New York; Ex-President of the Brooklyn Gynecological Society; Ex-President of the Medical Society of the County of Kings. 291 Hancock Street, Brooklyn, N. Y.

Founder.—Carstens, J. Henry, M.D. Professor of Obstetrics and Clinical Gynecology in the Detroit College of Medicine; Gyne-

cologist to Harper Hospital; Attending Physician to the Woman's Hospital; Obstetrician to the House of Providence; President of the Detroit Gynecological Society, 1892. *Vice-President*, 1888–'89; *President*, 1895; *Executive Council*, 1896. 620 Woodward Avenue, Detroit, Mich.

1895.—Cheesman, William Sanderson, A.M., M.D. Surgeon to the Auburn City Hospital; Permanent Member of the Medical Society of the State of New York; Fellow of the New York Academy of Medicine. 22 William Street, Auburn, N. Y.

Founder.—Clarke, Augustus Peck, A.M., M.D. Dean and Professor of Gynecology and Abdominal Surgery in the College of Physicians and Surgeons, Boston; Vice-President of the American Medical Association, 1896; President of the Gynecological Society of Boston, 1891–'92; Vice-President of the Pan-American Medical Congress, 1893; Member of the Massachusetts Medical Society; Fellow of the American Academy of Medicine; Member of the American Public Health Association; Consulting Physician to the Middlesex Hospital and Dispensary. 825 Massachusetts Avenue, Cambridge, Mass.

1890.—*Coles, Walter, M.D. St. Louis, Mo. 1892.

1889.—Conklin, William Judkins, A.M., M.D. Visiting Surgeon to St. Elizabeth's Hospital; President of the Medical Society of the State of Ohio, 1891. 17 East First Street, Dayton, Ohio.

1892.—Cordier, Albert Hawes, M.D. Lecturer on Abdominal Surgery in the Kansas City Medical College; First Vice-President of the Kansas State Medical Society, 1892; Corresponding Member of the Philadelphia Obstetrical Society; *Vice-President*, 1895. 310 Rialto Building, Kansas City, Mo.

1894.—Crofford, Thomas Jefferson, M.D. Professor of Physiology and Clinical Lecturer on Diseases of Women in the Memphis Hospital Medical College; Member of the Southern Surgical and Gynecological Association. 155 Third Street, Memphis, Tenn.

Founder.—Cushing, Clinton, M.D. Professor of Gynecology in Cooper Medical College; Consulting Surgeon to the French Hospital. *Executive Council*, 1888–'91. 636 Sutter Street, San Francisco, Cal.

1892.—Cushing, Ernest Watson, A.B., M.D. Surgeon of the Woman's Charity Club Hospital; Editor of the *Annals of Gynecology and Pediatry*. 168 Newbury Street, Boston, Mass.

1894.—Davega, S.M., M.D. Surgeon to the Richmond and Danville Railroad, C. and L. R. R., C. and C. R. R., G. C. and N. R. R. Wylie Street, Chester, S. C.

1889.—Davis, William Elias B., M.D. Secretary of the Southern Surgical and Gynecological Association, 1888–'96; formerly Surgeon to the Birmingham Hospital of United Charities; President of the Tri-State Medical Society of Alabama, Georgia, and Tennessee, 1892; Secretary of the Surgical Section of the American Medical Association, 1891; Honorary President of the Section on Gynecology and Abdominal Surgery of the First Pan-American Medical Congress; Honorary Member of the Medical Society of the State of New York; *Vice-President*, 1895. 2031 Avenue G, Birmingham, Ala.

1892.—Dewees, William Busby, A.M., M.D. President, 1891–'92, of the Golden Belt Medical Society of Kansas; Vice-President of the Pan-American Medical Congress of 1893 for Kansas; Fellow of the American Academy of Medicine; Member of the American Public Health Association; Member of the American Medical Association; Member of the Western Association of Obstetricians and Gynecologists; Member of the Kansas State Medical Society; Life Member of the International Periodical Congress of Gynecology and Obstetrics. N. W. corner Santa Fé and Prescott Avenues, Salina, Kansas.

1892.—Dorsett, Walter Blackburn, M.D. Professor of Obstetrics in the Beaumont Hospital Medical College; President of the St. Louis Medical Society, 1892. 3941 West Bell Place, St. Louis, Mo.

1889.—Douglas, Richard, M.D. Professor of Gynecology and Abdominal Surgery in the Vanderbilt Medical College; President of the Tri-State Medical Society of Alabama, Georgia, and Tennessee, 1893; Fellow of the British Gynecological Society; Member of the Southern Surgical and Gynecological Association. 110 Spruce Street, Nashville, Tenn.

1892.—Duff, John Milton, A.M., M.D., Ph.D. Chairman of the Section of Obstetrics and Diseases of Women in the American Medical Association, 1893; Professor of Obstetrics in the Western Pennsylvania Medical College; Surgeon and Gynecologist to the Pittsburg South Side Hospital; Fellow of the American Academy of Medicine; President of the Pittsburg Obstetrical Society, 1891. 2006 Carson Street, Pittsburg, Pa.

1894.—Dunlap, Fayette, A.B., M.D. Danville, Ky.

1895.—Dunn, James Henry, M.D. Professor of Genito-urinary Diseases and Adjunct Professor of Clinical Surgery at the Medical Department of the University of Minnesota; Surgeon to City, Asbury, and St. Mary's Hospitals. 104 Royalston Avenue, Minneapolis, Minn.

1895.—Dunn, B. Sherwood, M.D. 946 Broadway, Los Angeles, Cal.

1892.—Dunning, Lehman Herbert, M.D. Professor of Diseases of Women in the Medical College of Indiana; Consulting Gynecologist to the Indianapolis City Hospital and Dispensary. 249 North Alabama Street, Indianapolis, Ind.

1895.—Earle, Frank Breckenridge, M.D. Professor of Obstetrics at the College of Physicians and Surgeons. 535 Washington Boulevard, Chicago, Ill.

1895.—Ferguson, Alexander Hugh, M.D. Professor of Surgery at the Chicago Post-Graduate Medical School. 2950 Indiana Avenue, Chicago, Ill.

1895.—Fish, Edmund Frost, M.D. Professor of Gynecology in the Milwaukee Medical College; Gynecologist to the Trinity Hospital; Gynecologist to the Milwaukee Free Dispensary. 1707 State Street, Milwaukee, Wis.

1890.—Frederick, Carlton Cassius, B.S., M.D. Adjunct Professor of Obstetrics in the Medical Department of Niagara University; Obstetrician and Gynecologist to the Buffalo Woman's Hospital; Obstetrician to the Widows' and Infants' Asylum; Gynecologist to the Erie County Hospital. 64 Richmond Avenue, Buffalo, N. Y.

1891.—Gibbons, Henry, Jr., A.M., M.D. Dean and Professor of Obstetrics and Diseases of Women and Children in Cooper Medical College; Consulting Physician to the French and the Children's Hospitals. 920 Polk Street, San Francisco, Cal.

1895.—Gilliam, David Tod, M.D. Professor of Obstetrics and Gynecology in the Starling Medical College. 70 Warner Avenue, Columbus, O.

Founder.—Glasgow, Frank Adams, A.B., M.D. Professor of Clinical Gynecology in the St. Louis Medical College; Physician and Pathologist to the Martha Parsons Free Hospital for Children; in charge of the Female Medical and Gynecological Departments of the

St. Louis Mullanphy Hospital. The Ericsson, 2608 Locust Street, St. Louis, Mo.

1895.—Goldspohn, Albert, B.S., M.D. Professor of Gynecology at the Post-Graduate Medical School; Attending Gynecological Surgeon to the German, Post-Graduate, and Deaconess's Hospitals. 519 Cleveland Avenue, Chicago, Ill.

1894.—Griffith, Jefferson Davis, M.D. Professor of Surgery in the Kansas City Medical College; Surgeon to St. Joseph's Hospital and to the Children's Hospital. Corner Eleventh and Washington Streets, Kansas City, Mo.

1892.—Haggard, William David, M.D. Professor of Gynecology and Diseases of Children in the Medical Department of the University of Tennessee; Consulting Gynecologist to City Hospital; Gynecologist to St. Margaret's Hospital; Chairman of Section on Diseases of Children, American Medical Association, 1886; Fellow (President, 1888) of the Southern Surgical and Gynecological Association; President of the Nashville Academy of Medicine and Surgery. 312 North High Street, Nashville, Tenn.

1889.—Hall, Rufus Bartlett, M.D. Didactic and Clinical Lecturer on Gynecology in the Miami Medical College; Surgeon-in-Charge of the Abdominal Department of the Presbyterian Hospital; Member of the Southern Surgical and Gynecological Association. *Vice-President*, 1891. Berkshire Building, 250 Elm Street, Cincinnati, Ohio.

1894.—Hayd, Herman Emilie, M.D., M.R.C.S. Eng. Gynecologist to the Erie County Hospital. 78 Niagara Street, Buffalo, N. Y.

1891.—Haynes, John Rudolph, M.D., Ph.D. Associate Professor of Gynecology in the Medical College of the University of Southern California. 929 South Main Street, Los Angeles, Cal.

Founder.—*Hill, Hampton Eugene, M.D. 1894.

1889.—Hoffman, Joseph, B.A., M.D. 126 West Diamond Street, Philadelphia, Pa.

1895.—Holmes, Bayard, B.S., M.D. Professor of Surgery at the College of Physicians and Surgeons. 104 East Fortieth Street, Chicago, Ill.

1891.—Holmes, Josus Billington Sanders, M.D. Professor of Obstetrics in the Southern Medical College; President of the Georgia State Medical Association, 1890; Member of the Southern Surgical

and Gynecological Association; Member of the American Medical Association. 17 West Cain Street, Atlanta, Georgia.

1894.—Howell, Stephen Yates, A.M., M.D., M.R.C.S. Eng. Clinical Instructor in Diseases of Women in the Medical Department of the University of Buffalo; Gynecologist to the Erie County Hospital. 164 Franklin Street, Buffalo, N. Y.

1891.—Howitt, Henry, M.D., M.R.C.S. Eng. Surgeon to the Guelph General and St. Joseph's Hospitals, Guelph; Member of the British and Ontario Medical Associations; Medical Health Officer for the City of Guelph. *Vice-President*, 1895. 235 Woolwich Street, Guelph, Ontario, Canada.

1890.—Hughes, Donnel, M.D. *Executive Council*, 1893. 4005 Chestnut Street, Philadelphia, Pa.

1892.—Hulbert, George Frederick, M.D. Professor of the Principles and Practice of Medicine and Clinical Gynecology in the Marion-Sims Medical College; Consulting Physician and Surgeon to the Missouri Pacific Railway Hospital; Consulting Gynecologist to the St. Louis City and Female Hospitals; Secretary of the St. Louis Obstetrical and Gynecological Society. *Vice-President*, 1894. 4270 Delmar Avenue, St. Louis, Mo.

1892.—Hypes, Benjamin Murray, A.M., M.D. Professor of Obstetrics in the Marion-Sims Medical College. 2005 Victor Street, St. Louis, Mo.

Founder.—Ill, Edward Joseph, M.D. Surgeon to the Women's Hospital; Gynecologist to St. Barnabas's and Consulting Gynecologist to the German Hospitals. *Vice-President*, 1893. 1002 Broad Street, Newark, N. J.

1894.—Jayne, Walter Addison, M.D. Lecturer on Gynecology in the Medical Department of the University of Colorado; Consultant in Gynecology, St. Luke's Hospital; Gynecologist to the Arapahoe County Hospital, Denver. 217 McPhee Building, Denver, Col.

Founder.—Jarvis, George Cyprian, M.D. Visiting Surgeon to the Hartford Hospital. 98 High Street, Hartford, Conn.

1892.—Jelks, James Thomas, M.D. President of the Arkansas Medical Society, 1892; Chairman of the Section of Surgery in the American Medical Association, 1893; Professor of Gynecology in Barnes Medical College, St. Louis, Mo.; Member of the Southern

Surgical and Gynecological Association. 178 Central Avenue, Hot Springs, Ark.

1894.—Jennings, Charles Godwin, M.D. Professor of the Theory and Practice of Medicine and Clinical Diseases of Children in the Detroit College of Medicine; Physician to St. Mary's Hospital, Department of Diseases of Children; Physician to St. Vincent's Orphan Asylum; Consulting Physician to the Woman's Hospital and Foundlings' Home; Consulting Physician to St. Luke's Hospital; Member of the American Pediatric Society. 457 Jefferson Avenue, Detroit, Mich.

1891.—Johnston, George Ben, M.D. Professor of Surgery in the Medical College of Virginia; Physician to St. Sophia's Home for the Aged; Physician to St. Joseph's Female Orphan Asylum; Consulting Surgeon to the Richmond Eye, Ear, and Throat Infirmary; Vice-President of the Southern Surgical and Gynecological Association, 1892; Ex-President of the Richmond Medical and Surgical Society. 407 East Grace Street, Richmond, Va.

1890.—Krug, Florian, M.D. Gynecologist to the German Hospital; Fellow of the American Gynecological Society; Fellow of the Academy of Medicine; Member of the Obstetrical Society; Member of the Medical Society of the County of New York; Member of the German Medical Society. 13 East Forty-first Street, New York, N.Y.

1893.—Laidley, Leonidas Hamlin, M.D. Professor of Gynecology in the Beaumont Hospital Medical College; Surgeon-in-Chief to the Protestant Hospital. 3538 Washington Avenue, St. Louis, Mo.

1894.—Long, John Wesley, M.D. Professor of Gynecology and Pediatrics in the Medical College of Virginia; Consulting Surgeon to the Gynecological and Pediatric Department of the City Dispensary; Member of the Southern Surgical and Gynecological Association. 12 North Second Street, Richmond, Va.

1890.—Longyear, Howard Williams, M.D. Gynecologist to Harper Hospital; Physician to the Women's Hospital; President of the Detroit Gynecological Society, 1889; Chairman of the Section on Obstetrics and Gynecology of the Michigan State Medical Society, 1892. *Vice-President*, 1893. 698 Woodland Avenue, Detroit, Michigan.

Founder.—Lothrop, Thomas, M.D. Professor of Obstetrics, Niagara University; Director of the Woman's Hospital; Physician

to St. Francis's Hospital; Consulting Physician to the Hospital of the Sisters of Charity and to the Providence Retreat for the Insane. 153 Delaware Avenue, Buffalo, N. Y.

1891.—Macdonald, Willis Goss, M.D. Lecturer on Operative Surgery and Instructor in Abdominal Surgery in Albany Medical College; Surgeon to the Out-door Department of the Albany Hospital. 37 Eagle Street, Albany, N. Y.

Founder.—McArdle, Thomas Eugene, A.M., M.D. Professor of Minor Surgery in the National Medical College; Assistant Surgeon in the Children's Hospital. 821 Sixteenth Street, Washington, D. C.

1891.—*McCann, James, M.D. Pittsburg, Pa. 1893.

1893.—McColl, Hugh, M.D. Graduate Toronto Normal, 1864; Bellevue Hospital Medical College, N. Y., 1871; Member of the American Medical Association; Member of the American Health Association; Member of the American Academy of Political and Social Science; Member of the Michigan State Medical Society; Member of the Detroit Gynecological Society; Member of the Michigan N. E. District Medical Association. Nepessing Street, Lapeer, Mich.

1894.—McGuire, Edward, M.D. Professor of Gynecology in the University College of Medicine; Gynecologist to the Virginia Hospital; Member of the Southern Surgical and Gynecological Association. 216 East Franklin Street, Richmond, Va.

Founder.—McMurtry, Lewis Samuel, A.M., M.D. Professor of Gynecology in the Hospital College of Medicine; Gynecologist to Sts. Mary and Elizabeth Hospital; Fellow of the Edinburgh Obstetrical Society; Fellow of the British Gynecological Society; Corresponding Member of the Obstetrical Society of Philadelphia and of the Gynecological Society of Boston; Member (President, 1891) of the Southern Surgical and Gynecological Association. *Executive Council*, 1891–'92, 1895–'96. *President*, 1893. 231 West Chestnut Street, Louisville, Ky.

Founder.—Manton, Walter Porter, M.D. President of the Detroit Academy of Medicine, 1894; Vice-President of the Medical Board of the Woman's Hospital and Foundlings' Home; Consulting Gynecologist to the Eastern and Northern Michigan State Asylum for the Insane and St. Joseph's Retreat; Gynecic Surgeon to the House

of the Good Shepherd; Lecturer on Obstetrics in the Detroit Medical College; Fellow of the British Gynecological Society; Fellow of the Royal Microscopical Society. *Vice-President*, 1894. 32 Adams Avenue, Detroit, Michigan.

Founder.—Maxwell, Thomas Jefferson, M.D. Professor of Obstetrics and Gynecology, College of Physicians and Surgeons; Surgeon to St. Joseph's Hospital. 727 North Ninth Street, Keokuk, Iowa.

1893.—*Michael, Jacob Edwin, A.M., M.D., 1895. Baltimore, Maryland.

Founder.—Miller, Aaron Benjamin, M.D. Professor of Gynecology in the Medical Department of Syracuse University; Gynecologist to St. Joseph's Hospital, House of the Good Shepherd and Dispensary. 326 Montgomery Street, Syracuse, N. Y.

1894.—Meyer, Joseph, M.D. Member of the Philadelphia Obstetrical Society. Dallas, Texas.

1890.—Morris, Robert Tuttle, A.M., M.D. Instructor in Surgery at the New York Post-Graduate Medical School and Hospital. *Vice-President*, 1892. 49 West Thirty-ninth Street, New York, N. Y.

Founder.—Moses, Gratz Ashe, M.D. (See Honorary Fellows.)

1894.—Murphy, John Benjamin, A.M., M.D. Professor of Surgery in the College of Physicians and Surgeons and in the Post-Graduate Medical College; Attending Surgeon to the Cook County Hospital and to Alexander Hospital. Residence, 3152 Michigan Avenue; Office, 34 Venetian Building, Chicago, Ill.

Founder.—Myers, William Herschel, M.D. Surgeon to St. Joseph's Hospital; Member of the American and the British Medical Associations; Member of the Pathological Society of London; Member of the International Congress of Gynecologists and Obstetricians; Member of the Chicago Medical Society. *Vice-President*, 1890. 157 West Wayne Street, Fort Wayne, Indiana.

1891.—Nevitt, R. Barrington, B.A., M.D. Lecturer on Clinical Surgery and Dean of the Women's Medical College; Surgeon to Toronto General Hospital; Surgeon to the Hospital for Sick Children; Surgeon to St. Michael's Hospital. 176 Jarvis Street, Toronto, Ont., Canada.

1889.—Paine, John Fannin Young, M.D. Professor of Obstetrics and Gynecology in the School of Medicine, University of Texas; Obstetrician and Gynecologist to the John Sealy Hospital; President of the Texas State Medical Association, 1888; Vice-President of the Section of Public and International Hygiene in the Ninth International Medical Congress; Member of the American Medical Association and of the Southern Surgical and Gynecological Association. S. E. corner Broadway and Twenty-sixth Street, Galveston, Texas.

1890.—Pearson, William Libbey, M.D. 713 Union Street, Schenectady, N. Y.

1891.—Peck, George Sherman, M.D. Consulting Surgeon to the City Hospital. *Vice-President*, 1896. 26 West Federal Street, Youngstown, Ohio.

1893.—Peterson, Reuben, A.B., M.D. Gynecologist to St. Mark's Hospital. 26 South Union Street, Grand Rapids, Mich.

1891.—Porter, William, Jr., M.D. Attending Physician to the Hartford Orphan Asylum; Member of the Hartford Medical Society, of the Hartford County Medical Society, and of the Connecticut State Medical Society. 47 Forest Street, Hartford, Conn.

Founder.—Potter, William Warren, M.D. Consulting Gynecologist to the Woman's Hospital; Examiner in Obstetrics, New York State Medical Examining and Licensing Board; Chairman of the Section of Obstetrics and Diseases of Women, American Medical Association, 1890; President of the Buffalo Obstetrical Society, 1884–'86; Member of the Southern Surgical and Gynecological Association; President of the Medical Society of the State of New York, 1891; Executive President of the Section of Gynecology and Abdominal Surgery, Pan-American Medical Congress, 1893. *Secretary*, 1888–'96. 284 Franklin Street, Buffalo, N. Y.

1891.—Praeger, E. Arnold, M.D. Professor of Gynecology at the Los Angeles Polyclinic; Clinical Gynecologist at the Free Dispensary; Fellow of the Obstetrical Society of London, England; Member of the British and Canadian Medical Associations; Member of the Southern California and Los Angeles County Medical Societies. 57–59 Potomac Block, Broadway, Los Angeles, Cal.

Founder.—Price, Joseph, M.D. Physician-in-charge of the Obstetrical and Gynecological Department of the Philadelphia Dispensary; Member of the Southern Surgical and Gynecological Association; Honorary Fellow of the Medical Society of the State of New York;

Honorary Fellow of the South Carolina Medical Society; Honorary Fellow of the Virginia Medical Society; Member of the British Gynecological Association and of the Edinburgh Obstetrical Society. *Executive Council*, 1894–'95. *President*, 1896. 241 North Eighteenth Street, Philadelphia, Pa.

Founder.—Reed, Charles Alfred Lee, A.M., M.D. Professor of Gynecology and Abdominal Surgery in the Cincinnati College of Medicine and Surgery and in the Woman's Medical College of Cincinnati; Surgeon to the Cincinnati Free Surgical Hospital for Women; Secretary-General of the First Pan-American Medical Congress, 1893; Member of the Southern Surgical and Gynecological Association. *Executive Council*, 1890–'96. St. Leger Place, Cincinnati, Ohio.

1890.—Ricketts, Edwin, M.D. Professor of Abdominal Surgery and Gynecology at the Cincinnati Polyclinic; Member of the American and British Medical Associations; Member of the Southern Surgical and Gynecological Association. 415 Broadway, Cincinnati, Ohio.

1890.—Robinson, William Lovaille, M.D. Ex-President of the Danville Medical Society; Member of the Virginia State Medical Examining Board; Member of the Southern Surgical and Gynecological Association. 733 Main Street, Danville, Va.

1889.—Rohé, George Henry, M.D. Professor of Materia Medica, Hygiene, and Mental Diseases in the College of Physicians and Surgeons; Superintendent of the Maryland Hospital for the Insane; Member of the Southern Surgical and Gynecological Association. *Vice-President*, 1891. *Executive Council*, 1892–'93. *President*, 1894. Baltimore, Md.

1892.—Rosenwasser, Marcus, M.D. Dean and Professor of Diseases of Women and Abdominal Surgery in the University of Wooster; Gynecologist to the Cleveland Hospital for Women and Children; Consulting Gynecologist to the City Hospital; Member of the American Medical and Ohio State Medical Associations. 722 Woodland Avenue, Cleveland, Ohio.

1890.—Ross, James Frederick William, M.D., L.R.C.P. (Eng.). Gynecologist to the Toronto General Hospital; Surgeon to the Woman's Hospital; Lecturer in Gynecology at the Woman's Medical College. *Executive Council*, 1892–'96. 481 Sherbourne Street, Toronto, Ont., Canada.

1895.—Sellman, William Alfred Belt, M.D. Professor of the Diseases of Women and Obstetrics at the Baltimore University School of Medicine. 5 East Biddle Street, Baltimore, Md.

1890.—Sexton, John Chase, A.M., M.D. *Executive Council*, 1894. Rushville, Indiana.

1889.—Seymour, William Wotkyns, A.B., M.D. Professor of Gynecology in the University of Vermont; formerly House Surgeon of the Boston City Hospital; Member of the American Medical Association; Fellow of the New York State Medical Association; Member of the British Medical Association. *Executive Council*, 1892–'93. 105 Third Street, Troy, N. Y.

1891.—Smith, Charles North, M.D. Professor of Obstetrics and Clinical Gynecology in the Toledo Medical College; Gynecologist to St. Vincent's Hospital. 1921 Franklin Avenue, Toledo, Ohio.

Founder.—Stanton, Byron, M.D. Professor of Diseases of Women and Children in the Miami Medical College; Consulting Obstetrician to Christ's Hospital. *Executive Council*, 1888–'89. 931 Dayton Street, Cincinnati, Ohio.

1895.—Steele, Daniel Atkinson King, M.D. President and Professor of the Principles and Practice of Surgery at the College of Physicians and Surgeons; Attending Surgeon at the Chicago, Wesley, and Post-Graduate Hospitals; Consulting Surgeon at the Palmer Memorial Hospital, Janesville, Wis. 2920 Indiana Avenue, Chicago, Ill.

1890.—Stone, Isaac Scott, M.D. Professor of Clinical Gynecology in the University of Georgetown; Gynecologist to the Columbia Hospital for Women; Fellow of the British Gynecological Society; Member of the Southern Surgical and Gynecological Association; Member of the Medical Society of the District of Columbia. 1409 Rhode Island Avenue, N. W., Washington, D. C.

Founder.—Storrs, Melancthon, A.M., M.D. Attending Surgeon to the Hartford Hospital; President Connecticut State Medical Society. *Executive Council*, 1888–'89. 91 Ann Street, Hartford, Conn.

1894.—Stover, Charles, M.D. President of the Amsterdam City Medical Society, 1895. 31 Division Street, Amsterdam, N. Y.

1894.—Tappey, Ernest Taylor, A.M., M.D. Clinical Professor of Surgery in the Detroit College of Medicine; Surgeon to Harper Hospital. 141 Fort Street, Detroit, Mich.

1894.—Taylor, Hugh McGuire, M.D. Professor of the Practice of Surgery in the University College of Medicine, Richmond, Va.; Member of the Surgical Staff of the Virginia Hospital, Richmond, Va.; Ex-President of the Medical Examining Board of Virginia; Ex-President of the Richmond Medical and Surgical Society; Member of the American Medical Association; Member of the Southern Surgical and Gynecological Association; Member of the National Association of Railway Surgeons. 6 North Fifth Street, Richmond, Va.

Founder.—Taylor, William Henry, M.D., Ph.D. Dean and Professor of Obstetrics, Miami Medical College; Obstetrician to the Cincinnati Hospital; Consulting Obstetrician to Christ's Hospital. *President*, 1888–'89. 553 West Seventh Street, Cincinnati, Ohio.

1895.—Thomas, Charles Preston, M.D. Surgeon to the Everett Hospital; Member of the American Medical Association and of the Washington State Medical Society. Everett, Wash.

1890.—Thomas, George Gillett, M.D. Ex-President Medical Society of the State of North Carolina. Wilmington, N. C.

1895.—Thompson, Frank Daniel, M.D. Professor of Gynecology in the Medical Department of Fort Worth University. 412 Adams Street, Fort Worth, Texas.

1895.—Tompkins, Christopher, M.D., Ph.D. Professor of Obstetrics and Dean of the Medical College of Virginia; Obstetrician to the Old Dominion Hospital; Member of the Southern Surgical and Gynecological Association. 116 East Franklin Street, Richmond, Va.

Founder.—*Townsend, Franklin, A.M., M.D., 1895. Albany, N. Y.

Founder.—Vander Veer, Albert, A.M., M.D., Ph.D. Professor of Didactic, Clinical, and Abdominal Surgery in the Albany Medical College; Attending Surgeon to the Albany Hospital; Consulting Surgeon to St. Peter's Hospital; Fellow of the American Surgical Association; Fellow of the British Gynecological Society; Member of the Southern Surgical and Gynecological Association; Corresponding Member of the Boston Gynecological Society. *Executive Council*, 1889–'91, 1895–'96. *President*, 1892. 28 Eagle Street, Albany, N. Y.

1891.—Walker, Edwin, M.D., Ph.D. Gynecologist to the Evansville City Hospital; President of the Indiana State Medical Society, 1892; Member of the American Medical Association and of the Mis-

sissippi Valley Medical Association; Member of the Southern Surgical and Gynecological Association. 427 Upper Third Street, Evansville, Indiana.

1890.—Ward, Milo Buel, A.M., M.D., Professor of Gynecology in the Kansas Medical College; Secretary of the Section on Obstetrics and Diseases of Women in the American Medical Association, 1893; President of the Western Association of Obstetricians and Gynecologists, 1892. 323 Potwin Place, Topeka, Kansas.

1889.—Wenning, William Henry, A.M., M.D. Professor of Obstetrics in the Woman's Medical College; Gynecologist to St. Mary's Hospital. 722 Laurel Street, Cincinnati, Ohio.

Founder.—Werder, Xavier Oswald, M.D. Professor of Gynecology at the Western Pennsylvania Medical College (Medical Department, University of Western Pennsylvania); Consulting Gynecologist at the Allegheny General Hospital; Gynecologist to the Mercy Hospital and Pittsburg Free Dispensary; Obstetrician to the Roselia Maternity Hospital; Consulting Gynecologist to St. Francis's Hospital; Consulting Surgeon to the South Side Hospital. *Treasurer*, 1888–'96. 524 Penn Avenue, Pittsburg, Pa.

1893.—Wheaton, Charles Augustus, M.D. Professor of Clinical Surgery in the University of Minnesota. 301 Summit Avenue, St. Paul, Minn.

1893.—Winn, John Farmer, M.D. Adjunct Professor of Obstetrics in the College of Physicians and Surgeons, Richmond, Virginia; Corresponding Secretary of the Medical Society of Virginia; Member of the Richmond Academy of Medicine and Surgery; Editor and Proprietor of *Richmond Journal of Practice.* 800 East Marshall Street, Richmond, Virginia.

Founder.—Wright, Adam Henry, B.A., M.D. Univ. Toronto, M.R.C.S. Eng. Professor of Obstetrics in the University of Toronto; Obstetrician and Gynecologist to the Toronto General Hospital and Burnside Lying-in Hospital. *President*, 1891. 30 Gerrard Street, East, Toronto, Ont., Canada.

Total, one hundred and seventeen Ordinary Fellows.

MINUTES OF THE PROCEEDINGS

AT THE

EIGHTH ANNUAL MEETING

OF THE

AMERICAN ASSOCIATION

OF

OBSTETRICIANS AND GYNECOLOGISTS,

HELD IN THE

AUDITORIUM HOTEL,

Chicago, Ill.

SEPTEMBER 24, 25, AND 26, 1895.

EIGHTH ANNUAL MEETING.

CHICAGO, ILLINOIS, TUESDAY, WEDNESDAY, AND THURSDAY,
SEPTEMBER 24, 25, AND 26, 1895.

The following-named Fellows were present:

BACON, JOSEPH B.	CHICAGO.
BALDWIN, JAMES F.	COLUMBUS.
BLUME, FREDERICK	ALLEGHENY.
BROWN, JOHN YOUNG, JR.	LAKELAND.
CARSTENS, J. HENRY	DETROIT.
CORDIER, A. H.	KANSAS CITY.
DAVIS, WILLIAM E. B.	BIRMINGHAM.
DORSETT, WALTER B.	ST. LOUIS.
DUNN, JAMES H.	MINNEAPOLIS.
DUNN, B. SHERWOOD	LOS ANGELES.
DUNNING, L. H.	INDIANAPOLIS.
EARLE, FRANK B.	CHICAGO.
FERGUSON, ALEXANDER H.	CHICAGO.
FISH, EDMUND F.	MILWAUKEE.
FREDERICK, CARLTON C.	BUFFALO.
GOLDSPOHN, ALBERT	CHICAGO.
HALL, RUFUS B.	CINCINNATI.
HAYD, HERMAN E.	BUFFALO.
HOLMES, BAYARD	CHICAGO.
HYPES, BENJAMIN M.	ST. LOUIS.
ILL, EDWARD J.	NEWARK.
LAIDLEY, LEONIDAS H.	ST. LOUIS.
LONGYEAR, HOWARD W.	DETROIT.
MACDONALD, WILLIS G.	ALBANY.
MANTON, WILLIAM P.	DETROIT.
MAXWELL, THOMAS J.	KEOKUK.
McMURTRY, LEWIS S.	LOUISVILLE.
MURPHY, JOHN B.	CHICAGO.
MILLER, AARON B.	SYRACUSE.
MYERS, WILLIAM H.	FORT WAYNE.

PECK, GEORGE S.	YOUNGSTOWN.
POTTER, WILLIAM W.	BUFFALO.
ROSENWASSER, MARCUS	CLEVELAND.
ROSS, JAMES F. W.	TORONTO.
STEELE, D. A. K.	CHICAGO.
TAPPEY, ERNEST T.	DETROIT.
THOMAS, CHARLES P.	EVERETT.
THOMPSON, FRANK D.	FORT WORTH.
WARD, MILO D.	TOPEKA.
WERDER, XAVIER O.	PITTSBURG.

Total, forty Fellows.

Letters or messages of regret were received from the following-named Fellows:

Honorary.—Hiram Corson, Trail Green, and G. A. Moses.

Ordinary.—Eugene Boise, James P. Boyd, Clinton Cushing, William B. Dewees, John M. Duff, Frank A. Glasgow, J. D. Griffith, John R. Haynes, Stephen Y. Howell, Henry Howitt, Donnel Hughes, George C. Jarvis, Walter A. Jayne, George Ben Johnston, J. W. Long, Thomas E. McArdle, Robert T. Morris, William Porter, Jr., E. Arnold Praeger, Joseph Price, Charles A. L. Reed, George H. Rohé, John C. Sexton, Franklin Townsend, Jr., Byron Stanton, Charles Stover, William H. Taylor, Albert Vander Veer, Edwin Walker, and Adam H. Wright.

Upon recommendation of the Executive Council the following-named physicians were invited to participate in the proceedings as members by invitation, namely:

William E. Quine, Daniel T. Nelson, Franklin H. Martin, J. M. Auld, E. H. Lee, Jacob Frank, E. Powell Nutting, G. Frank Lydston, J. H. Hollister, E. C. Dudley, H. P. Newman, Fernand Henrotin, Frank H. Booth, Sarah J. Hogan, John B. Hamilton, H. T. Byford, and the President and members of the Chicago Gynecological Society, Chicago; Perry H. Millard, St. Paul; A. Walter Suiter, Herkimer, N. Y.; C. C. Fite, New York City; Emery Lanphear, St. Louis; Alfred David, Houghton, Mich.; J. B. Scallon, Hancock, Mich.; Charles R. Barber, William B. Jones, and J. W. McCauley, Rochester, N. Y.; David W. Runyan, Sturgis, Mich.; H. Horace Grant, Louisville, Ky.; William T. Dalby and S. C. Baldwin, Salt Lake City, Utah; A. B. Rosenbury, Arbor Vitæ, Wis.; Charles K. Cole, Helena, Montana; and Joseph Eastman, Indianapolis.

FIRST DAY—*Tuesday, September 24th.*

Morning Session.—The Association convened in the South Parlor of the Auditorium Hotel, and was called to order at 10 o'clock by the President, Dr. J. Henry Carstens, of Detroit. He introduced Dr. William E. Quine, who delivered the following Address of Welcome, on behalf of the profession of Chicago:

ADDRESS OF WELCOME BY DR. QUINE.

MR. PRESIDENT AND GENTLEMEN OF THE ASSOCIATION: I esteem it a high honor to be permitted to appear before you as the representative of the medical profession of Chicago and bid you welcome to this city. Our hearts and our homes are open to you; likewise our hotels, the latter at the rate of ten dollars a day. (Laughter.) Chicago is sometimes referred to by the envious newspapers of the late metropolis of the country as "The Windy City," and its atmosphere *is* kept in a condition of perpetual perturbation by the fluttering coat-tails of its energetic citizens. So accurately is the influence of coat-tails on conditions of the atmosphere appreciated here that many of our best people do not wear coats at all, and some wear coats without tails; but I defy you to find a person, in any public place in Chicago, so regardless of consequences as to wear coat-tails without a coat. (Laughter.)

The great branch of the medical profession with which you are so honorably connected, numbering among its votaries such men as Hodge, Bedford, Meigs, the Byfords, Thomas, the Prices, McMurtry, and others has contributed, I conceive, as much as, if not more than, any other department of the healing art to shed lustre upon American medicine, and to give it a place of commanding dignity in other parts of the world. You are invited to inspect our hospitals, our dispensaries, and other educational institutions, and in your deliberations here and your efforts hereafter, in the direction of preventing the dangers of the birth-chamber and in curing the ailments of women, I bid you God-speed. (Applause.)

RESPONSE BY THE PRESIDENT.

DR. QUINE: In behalf of the American Association of Obstetricians and Gynecologists, I sincerely thank the profession of Chicago for the kind welcome extended to us through you. It will be appreciated. We were very happy indeed to come to Chicago, for we think it will

do us good. We hope to infuse some of the snap and energy and push into our Association which seems to permeate the air here, and which will tend to elevate, strengthen, and improve it. Again, I thank you on behalf of the Association.

Papers were then read as follows :

1. "Notes of a Case of Double Suppurating Parotitis Following Vaginal Hysterectomy, with Water-color Drawings," by Dr. James F. W. Ross, of Toronto.

Discussed by Drs. Ricketts, Frederick, Baldwin, Macdonald, Auld, Longyear, Cordier, Ferguson, and in closing by the essayist.

2. "Intermediate Treatment of Puerperal Sepsis," by Dr. A. B. Miller, of Syracuse, N. Y.

3. "Indications for Operation in Puerperal Sepsis," by Dr. L. S. McMurtry, of Louisville, Ky.

These two papers were discussed conjointly by Drs. Davis, Hayd, Potter, Manton, Longyear, Meyers, Frederick, Ross, Macdonald, Dunn, Fish, Cordier, Krieger, Carstens, and Blume, and in closing by Drs. Miller and McMurtry.

4. "Exceptional Location of Blood-clot in Ruptured Ectopic Pregnancy," by Dr. M. Rosenwasser, of Cleveland, Ohio.

Discussed by Drs. Longyear, Ross, Ricketts, Davis, Hall, Maxwell, and in closing by the author.

On motion, the Association, at 1.30 o'clock, adjourned until 8 P.M.

Evening Session, 8 o'clock.

The President in the Chair.

5. "Ruptured Interstitial Pregnancy," by Dr. L. H. Dunning, of Indianapolis, Ind.

Discussed by Drs. Watkins, Robinson, Byford, Cordier, Carstens, and in closing by the essayist.

6. "Intraperitoneal Adhesions," by Dr. Ernest T. Tappey, of Detroit, Mich.

7. "Ileus (Intestinal Obstruction)—Clinical Observations," by Dr. W. G. Macdonald, of Albany, N. Y.

These two papers were discussed together by Drs. Hayd, Cordier, Longyear, Robinson, Goldspohn, Murphy, Davis, Steele, Dunning, Maxwell, and in closing by the essayists.

In connection with the discussion on the above papers, Dr. H. H. Grant, of Louisville, exhibited a device for facilitating intestinal anastomosis.

On motion, the Association adjourned until Wednesday, 9.30 A.M.

SECOND DAY—*Wednesday, September 25th.*

Morning Session, 9.30 *o'clock.*—The President in the Chair.

8. "Clinical Contribution to Lateral Displacements of the Uterus," by Dr. Edward J. Ill, of Newark, N. J.

Discussed by Dr. Longyear.

9. "Vaginal Hysterectomy *Versus* Abdominal Section for Pustubes—Some of the Indications and Advantages of Vaginal Hysterosalpingo-oöphorectomy in Suppurative Pelvic Disease," by Dr. X. O. Werder, of Pittsburg, Pa.

Discussed by Drs. Eastman, McMurtry, Dunn, Cordier, Werder, Macdonald, Ricketts, Hayd, Potter, Carstens, Hall, Hypes, Henrotin, Nelson, Ross, Murphy, and Werder.

10. "President's Address—The American Association of Obstetricians and Gynecologists," by Dr. J. Henry Carstens, of Detroit, Mich.

At 1 o'clock a recess was taken until 2.30 o'clock.

Afternoon Session, 2.30 *o'clock.*

The First Vice-President, Dr. W. E. B. Davis, in the Chair.

11. "Etiology of Eclampsia Gravidarum," by Dr. Frederick Blume, of Pittsburg, Pa.

12. "Prophylaxis of Eclampsia Gravidarum," by Dr. H. W. Longyear, of Detroit, Mich.

13. "So-called Puerperal Eclampsia in Its Relation to Insanity," by Dr. W. P. Manton, of Detroit, Mich.

A general discussion followed the reading of these papers, and was participated in by Drs. Lanphear, Hayd, Frederick, Longyear, and Manton.

14. "Diagnosis of Intra-abdominal Neoplasms," by Dr. A. H. Cordier, of Kansas City, Mo.

Discussed by Dr. W. G. Macdonald.

15. "Pneumo-peritoneum," by Dr. James F. W. Ross, of Toronto, Canada.

Discussed by Drs. Baldwin, Jones, and Ross.

16. "Pelvic Inflammation in Women," by Dr. Rufus B. Hall, of Cincinnati, Ohio.

Discussed by Drs. Hayd, Longyear, Carstens, Hypes, Miller, and in closing by the essayist.

17. "Hydronephrosis Simulating Ovarian Tumor; Abdominal Nephrectomy; Recovery," by Dr. H. E. Hayd, of Buffalo, N. Y.

Discussed by Drs. Seymour, Dunning, Hypes, Dunn, Hall, Nelson, Carstens, and in closing by the author of the paper.

18. "Limitation of Craniotomy," by Dr. William H. Meyers, of Fort Wayne, Ind.

It being near adjournment, Dr. Manton moved that the discussion on Dr. Meyer's paper be made the special order for Thursday morning. Carried.

On motion, at 6 o'clock, the Association adjourned.

THIRD DAY—*Thursday, September 26th.*

Morning Session, 9.30 *o'clock.*—The President in the Chair.

The discussion on Dr. Myers's paper was taken up and participated in by Drs. Ricketts, Maxwell, Hall, and in closing by the essayist.

19. "Report of Recent Cases in Gall-bladder Surgery," by Dr. Edwin Ricketts, of Cincinnati, Ohio.

20. "Operative Procedures for the Relief of Obstruction of the Biliary Ducts," by Dr. W. E. B. Davis, of Birmingham, Ala.

These two papers were discussed jointly by Drs. Longyear, Murphy, Tappey, Seymour, Ross, Hall, Laidley, Ferguson, Maxwell, and Davis.

On motion, the Association, at 1 o'clock, took a recess until 2.30 o'clock.

Afternoon Session, 2.30 *o'clock.*

The President in the Chair.

21. "The Use and Abuse of the Uterine Curette," by Dr. W. B. Dorsett, of St. Louis, Mo.

Discussed by Drs. Goldspohn, Longyear, Ill, Carstens, and in closing by the essayist.

22. "Some Anomalies Found in Abdominal Surgery," by Dr. Thomas J. Maxwell, of Keokuk, Ia.

Discussed by Dr. Longyear.

23. "Should Intrauterine Injections of Glycerin be Used for the Induction of Labor?" By Dr. B. M. Hypes, of St. Louis, Mo.

24. "Has Gynecology Received Just Recognition as a Specialty?" By Dr. M. B. Ward, of Topeka, Kan.

25. "Typhoid Peritonitis," by Dr. J. B. Murphy, of Chicago, Ill.

26. "Surgical Treatment of Perforation of the Bowel in Typhoid Fever," by Dr. L. H. Laidley, of St. Louis, Mo.

Discussed by Dr. Murphy, and in closing by the essayist.

27. "Kraurosis Vulvæ; A Contribution to Its Pathology and Therapeutics," by Dr. H. W. Longyear, of Detroit, Mich.

Discussed by Drs. Jones, Dorsett, and in closing by the essayist.

The following papers were read by title and ordered published in the *Transactions:*

1. "Post-climacteric Endometritis," by Dr. John C. Sexton, of Rushville, Ind.

2. "Is So-called Conservatism in Gynecology Conducive of the Best Results to the Patient?" By Dr. E. Arnold Praeger, of Los Angeles, Cal.

3. "Appendicitis, with Special Reference to Early Diagnosis," by Dr. A. Vander Veer, of Albany, N. Y.

4. "Retroversion of the Uterus," by Dr. Eugene Boise, of Grand Rapids, Mich.

5. "Some of the Anatomical Factors Involved in Perineal Lacerations," by Dr. William Wotkyns Seymour, of Troy, N. Y.

6. "Neurasthenia Accompanying and Simulating Pelvic Disease," by Dr. C. C. Frederick, of Buffalo.

7. "Further Observations on the Nature of Shock," by Dr. Eugene Boise, of Grand Rapids, Mich.

8. "Relation of Pelvic Suppuration to Structural Changes that May Occur in the Fallopian Tubes," by Dr. A. P. Clarke, of Cambridge, Mass.

9. "Puerperal Sepsis," by Dr. W. B. Dewees, of Salina, Kan.

Before the Association adjourned, Dr. W. P. Manton offered the following resolutions, which were unanimously adopted:

Resolved (1), That the thanks of the Association be tendered to Dr. J. B. Murphy, Chairman of the Committee of Arrangements, for the excellent manner in which he has provided for the comfort and convenience of the Fellows during the meeting; and for the delightful boat ride on Lake Michigan, Tuesday afternoon, with all its attendant pleasures, and to which he so generously and hospitably invited the members, visitors, and ladies.

(2) To Messrs. Breslin and Southgate, proprietors of the Auditorium Hotel, for the tender of an elegant room in which to hold our meetings and for other courtesies extended to the Fellows who were guests in the Hotel.

(3) To the President and Members of the Chicago Gynecological Society for courtesies extended, and the medical profession of Chicago in general for attentions and kindnesses manifested during the meeting.

On motion, the Association then adjourned to meet at Richmond, Va., on Tuesday, Wednesday, and Thursday, September 15, 16, and 17, 1896.

WILLIAM WARREN POTTER,
Secretary.

Executive Session.

Tuesday, September 24th.

The President, Dr. J. Henry Carstens, in the Chair.

The Secretary, in behalf of the Executive Council, presented a list containing the names of candidates for Fellowship, and the Association then elected by ballot the following-named candidates:

Honorary.—Dr. Claudius H. Mastin, of Mobile, Ala.

Ordinary.—Dr. Joseph B. Bacon, Chicago, Ill.; Dr. James F. Baldwin, Columbus, O.; Dr. Walter B. Chase, Brooklyn, N. Y.; Dr. William S. Cheesman, Auburn, N. Y.; Dr. James H. Dunn, Minneapolis, Minn.; Dr. Alex. H. Ferguson, Chicago, Ill.; Dr. Edmund F. Fish, Milwaukee, Wis.; Dr. William A. B. Sellman, Baltimore, Md.; Dr. D. A. K. Steele, Chicago, Ill.; Dr. C. A. Wheaton, St. Paul, Minn.; Dr. A. Goldspohn, Chicago, Ill.; Dr. Chas. Thomas Preston, Everett, Wash.; Dr. Bayard Holmes, Chicago, Ill.; Dr. Frank B. Earle, Chicago, Ill.; Dr. William H. Humiston, Cleveland, O.; Dr. D. Tod Gilliam, Columbus, O.; Dr. Christopher Tompkins, Richmond, Va.; Dr. F. D. Thompson, Fort Worth, Texas; and Dr. Sherwood Dunn, Los Angeles, Cal.

The Treasurer, Dr. X. O. Werder, of Pittsburg, presented his report, showing a balance on hand of $155.94. The Secretary also reported the accounts and vouchers with reference to the contingent expenses for the fiscal year.

On motion, the President appointed as Auditing Committee Drs. M. Rosenwasser and Edward J. Ill.

The Auditing Committee subsequently reported that the accounts and vouchers of the Secretary and Treasurer had been carefully examined and found correct.

Recess until Wednesday evening at 7.30 o'clock.

Wednesday, September 25th.

The Executive Session was called to order by the President, at 7.30 o'clock, at the Union League Club.

The Secretary stated that he had received a telegram from Dr. George Ben Johnson, inviting the Association to hold its next meeting at Richmond, Va.

After freely discussing other places of meeting, it was voted to meet at Richmond, on Tuesday, Wednesday, and Thursday, September 15, 16, and 17, 1896.

Dr. W. G. Macdonald, of Albany, offered the following amendment to the Constitution (to lie over one year under the rules):

Section 3, second paragraph, substitute the words "one hundred and fifty" for one hundred and twenty-five.

The election of officers was then proceeded with, and the following-named Fellows were elected by ballot for the ensuing year:

President, Dr. Joseph Price, of Philadelphia. *First Vice-President*, Dr. A. H. Cordier, of Kansas City. *Second Vice-President*, Dr. George S. Peck, of Youngstown. *Secretary*, Dr. William Warren Potter, of Buffalo. *Treasurer*, Dr. X. O. Werder, of Pittsburg. *Executive Council*, Drs. Charles A. L. Reed, of Cincinnati; James F. W. Ross, of Toronto; L. S. McMurtry, of Louisville; A. Vander Veer, of Albany; and J. Henry Carstens, of Detroit.

There being no further business the Executive Session adjourned.

WILLIAM WARREN POTTER,
Secretary.

PAPERS

READ AT THE

EIGHTH ANNUAL MEETING

OF THE

AMERICAN ASSOCIATION

OF

OBSTETRICIANS AND GYNECOLOGISTS,

HELD IN THE

AUDITORIUM HOTEL,

Chicago, Illinois,

SEPTEMBER 24, 25, AND 26, 1895.

PRESIDENT'S ADDRESS.

THE USE OF SPECIAL SOCIETIES.

By J. H. CARSTENS, M.D.,
DETROIT.

In the process of evolution the constant tendency is for everything to change from the simple to the more complicated, or, as Herbert Spencer puts it, "from the homogeneous to the heterogeneous." This being the case in the inanimate as well as in the animate, as this rule holds good in the animal body, so it holds good in the efforts of the brain. Take our old profession, and consider how from the most simple has been brought about the most complicated; where the simple root-doctor of a primeval age gathered the leaves and roots and herbs himself from the meadows and hillsides, we have today vast corporations gathering medicinal agents from all parts of the globe. On the backs of mules and Indians the valuable cinchona-bark is carried hundreds of miles to a railroad where it can be transported to a harbor and thence to every part of the earth. We have agents gathering the kangaroo-tail in the wilds of Australia to procure the tendons for use in abdominal surgery; we have others who dig to the bowels of the earth to gather the metal from which our mercuric chloride solution is prepared; we have chemists and druggists and manufacturers in all parts of the civilized world who give their products to aid us in our work.

The primitive surgeon made his own instruments at the blacksmith's forge, while today we have instruments made at every medical centre on two continents to enable us to work with precision and rapidity. The work we do today could not be performed unaided; we have the assistance of thousands of men in various walks of life.

Formerly the man of genius in the medical profession, as today, was the busy man; he had no time to write books. Hence few books were written, and many of these were destroyed and lost to the world, as only single copies existed. Every physician gathered his own experience and then died, leaving nothing to posterity. With the advent of the greatest impulse to civilization, the printing-press, the works of medical men were multiplied a thousandfold. Every student then had before him the knowledge and the experience gained by his predecessors of many years. We start where they left off, and progress is rapid. But the man of genius was naturally in constant demand; he had not the time to write, as the mechanical work of longhand writing was a most laborious task, and few men wrote until they had retired from the profession, and then in their old age could jot down their experience. But this was not fresh; it was old when written. Many facts were forgotten by the authors, and their efforts were naturally imperfect. Then came days of increasing competition—days when the young man wrote who had no experience, but who had plenty of leisure and who had time to look through the literature of the past, and who collected the isolated facts found in many volumes and in many languages and put them together in readable form. This was an improvement, still it was not perfect. What we want is the work of individuals who have the experience and also the time to record it, and this experience based upon what they have done, seen, read, or heard. We wish the works of men who stamp upon their efforts the impress of their individuality.

The time for this has arrived, and with the aid of stenography, the typewriter, and the phonograph a man can, after formulating his views while riding from house to house, dictate what would take him hours to write, and in a few minutes express tersely and clearly the conclusions at which he has arrived and which may be based on the knowledge and the professional experience gathered in a quarter of a century or more. The result is marvelous; we have the experience of the master-minds of the profession from every part of the globe furnished us daily by the medical journals. By the division of labor we have not only isolated cases, but can deduct from hundreds and thousands correct conclusions of the causation, hence of the prophylactic and medicinal or surgical treatment, of morbid conditions.

We have societies which bring together medical men for the purpose of exchanging views. Some think we have too many medical societies in this country, but as I look around I do not think so; I doubt whether we have enough. Considering the extent of our territory, it can be readily seen that we must have many in order to reach the mass of the profession. Many men travel thousands of miles to attend medical societies in order to give with their own lips views based upon their own experience.

Let us continue from the homogeneous to the heterogeneous. Let the profession branch out in every possible direction; let as many societies be formed as possible. Each does some good; it raises up some of the profession to a higher and nobler plane; it prevents many from becoming fossils.

When we consider the work of special societies we readily see how the men whose experience is large in any particular branch must naturally arrive at correct conclusions ultimately. The path may be circuitous and thorny, but finally it will be smooth and straight. Although the general practitioner often in a jocose manner belittles and ridicules the specialist, there is no doubt that the specialist has done a great deal for the general practitioner. Take the wonderful developments of laryngology, which has enabled the general practitioner to make correct diagnoses and treat many of the diseases of the nose and throat. Take our own Association, the members of which have made a gynecologist of every general practitioner by devising instruments and simplifying the technique of the operation for lacerated cervix. Every general practitioner is also an obstetrician, as the mechanism of labor and the means of relieving deviations are now so well understood. In the course of time I think that, from the efforts of the specialist, all the complicated questions, the cause, diagnosis, and treatment of various diseases, will be cleared up, and it will be easy to diagnosticate and to treat them; then the occupation of the specialist will be virtually gone. Many diseases will be prevented by the forethought of the general practitioner, and cases which really occur will be easily and readily handled by him. We really move in circles and shall come back to the old family physician. The specialist is simply a link in the chain, and in the course of time, when the various questions interesting us now are cleared up and understood, his usefulness will cease.

The great interest which each of us takes in this Association, the incalculable value which it is to each through the interchange of our views, is not sufficient, it seems to me, to fulfil our mission. The medical press of this country and of Europe takes interest in our proceedings and reports them. Still, it seems to me that if the mass of general practitioners in this country would take a greater interest in our proceedings and participate in them we could accomplish much more. In the line of obstetrics the general practitioner would be greatly benefited, because he is also the obstetrician, and in the department of gynecology and abdominal surgery the points of early diagnosis and early treatment cannot be too often reiterated. It is the general practitioner who sees these cases first; he must diagnosticate the case and institute the proper treatment in time.

I have seriously wondered whether we could not interest the mass of the profession by having them join us or become life-members, they then being entitled to our proceedings for mere nominal annual dues. Or would it not be well if we could select some journal, or establish one ourselves, which would, month after month or week after week, lay before a large mass of the profession of this country the views of the members of this Association on those questions of medical arts and sciences in which we are especially interested? The mere acquisition of knowledge is of no consequence; anybody can acquire it. The great aim and object of knowledge are to make use of it in bettering and raising the condition of your fellow-man. Thus the teacher has the most noble profession. We are teachers now: we teach one another, we teach even a limited number of general practitioners; but we should try to reach the whole of the profession. We must continue year after year to take up some particular question and try to solve it in all its bearings. In my experience, members of the profession are weak in diagnosis. Anybody can treat a case, but it often takes genius to diagnosticate the disease.

The Fellows of this Association may be able nearly always to diagnosticate appendicitis and gall-stones or suppurating kidney, because they have had great experience; but the general practitioner cannot do it. The symptoms are not clear enough, and what we need especially is careful observation of differential symptoms, so that every case can readily be cleared up by the family physician.

In other words, we must furnish the general practitioner with an array of signs and symptoms and differential points by which he can diagnosticate these conditions *early* and beyond any question *correctly*. Our most severe and troublesome cases are those in which the diagnosis has not been made *early enough*, and our death-record would be very much lessened if we were not called upon so often to operate on cases as a last resort.

The members of this Association are nearly all the products of evolution; we were once general practitioners, and, as the result of choice or environment, have become obstetricians or gynecologists or abdominal surgeons. We fully appreciate the position of the family physician and the general practitioner. Instead of being antagonistic, we want to help him; we wish to aid him to a correct diagnosis, because the people appreciate and highly value a good diagnostician. The laity understands more and more that this is the basis of the practice of medicine.

What we as specialists can do by limiting ourselves to a particular branch, and what little mite we add is not for ourselves, but is to be the inheritance of the whole profession, which we wish to be elevated, to be perfect, to become accurate and as scientific as is possible in medicine. We desire to raise it in the estimation of the laity, so that it shall not be laughed at and ridiculed in the pulpit or in the court-room, but that it shall shine forth as an art, a science, and the noblest of vocations.

SUPPURATING BILATERAL PAROTITIS.

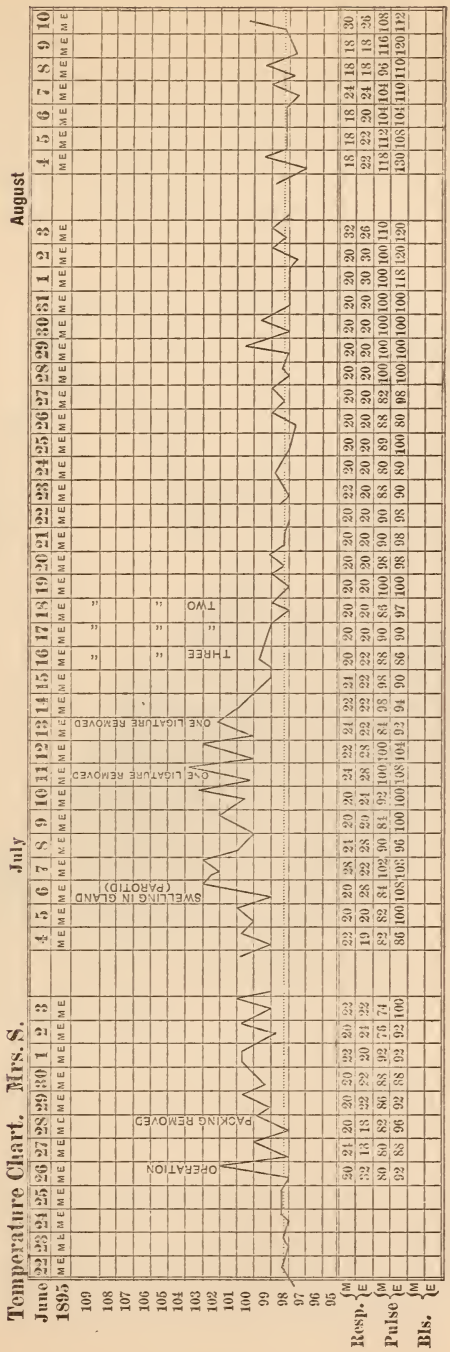
By JAMES F. W. ROSS, M.D.,
TORONTO.

As suppurating double parotitis following surgical operation is rare, I desire to put the following case on record.

Mrs. S., aged fifty-seven years, complained of uterine hemorrhage. She had passed the menopause several years, and began again to lose blood from the vagina. On examination commencing carcinoma of the cervix was discovered and vaginal hysterectomy advised. On the 26th of June, 1895, the patient, having been placed under chloroform, was operated upon. The vagina was thoroughly douched with a solution of bichloride of mercury by the nurse previous to the operation, and by myself at the time of the operation. A ligature having been placed through the cervix, the uterus was pulled down; the bladder was peeled off from the anterior surface of the uterus and was with difficulty avoided. The posterior cul-de-sac was then opened and the fingers passed in. The broad ligaments were ligated in sections with strong silk sutures and detached from the uterus and tubes. The uterus, tubes, and ovaries were then removed, the vagina was again douched with sterilized water and packed with iodoform-gauze. No drainage-tube was inserted. Patient left the table with a pulse of 76.

The packing was removed in forty-eight hours, when the vagina was douched with a solution of bichloride of mercury followed with sterilized water twice a day. On the afternoon of the tenth day subsequent to operation the temperature rose to 103°. Swelling in each parotid gland presented itself; the swelling gradually increased. The sides of the face became enormously swollen; the eyelids were puffed and the patient could scarcely open them.

On the fifteenth day one of the vaginal ligatures was removed.


Temperature Chart. Mrs. S.
June
1895
July
August
OPERATION
PACKING REMOVED
SWELLING IN GLAND (PAROTID)
ONE LIGATURE REMOVED
ONE LIGATURE REMOVED
THREE
TWO
Resp.
Pulse
Bls.

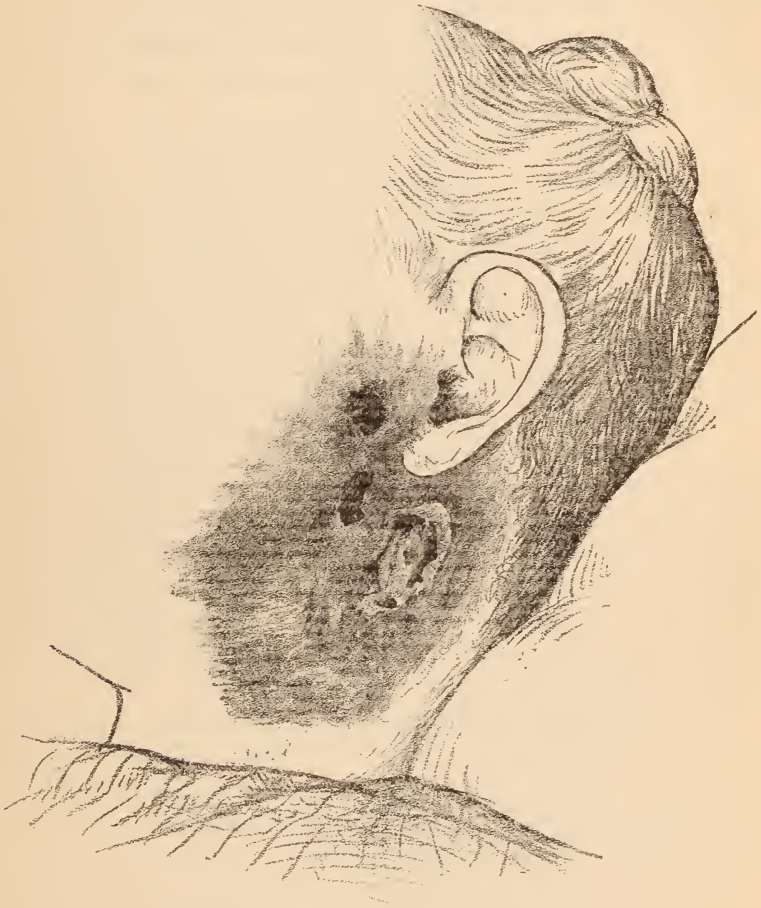
The temperature remained elevated, as shown in the accompanying chart, until the eighteenth day after the operation, when it began to drop. The pulse during the days of the fever never ran higher than 108 per minute, and averaged 90 per minute. On the nineteenth day three ligatures came away, on the twentieth three more, and on the twenty-first the last two were removed Notwithstanding the swelling the temperature fluctuated between normal and

Fig. 1.

99° for twelve days longer, when it again became elevated on the thirty-third day after the operation. The edema of the face began to disappear, but the swelling of the parotids continued. No fluctuation could be made out, but, fearing a lodgement of pus in some of the deeper portions, a scalpel was passed down through each swollen mass; a little pus oozed out, but it was evident that each gland was honeycombed. On the twenty-fifth day after the

operation aseptic diarrhea set in. At this time large pieces of slough were removed. After all the sloughing mass had been removed a raw surface was left, extending two inches in front of the angle of the jaw and from two to three inches behind and beneath the ramus of the jaw. The ramus itself was almost laid bare; its outline could be seen distinctly.

FIG. 2.



In spite of the administration of stimulants and the ingestion of large quantities of milk and the administration of tincture of iron, the patient continued to do badly. All discharge from the vagina had long since ceased, and, as already stated, all the ligatures

had been removed. The abdomen itself presented no abnormal condition. The diarrhea remained obstinate and could not be controlled. The pulse began to rise two days before death, and the case terminated fatally on the forty-sixth day after operation.

For two days before death, paralysis of the left side of the face and drooping of the left upper eyelid were noticed; the patient entered a semi-comatose condition and never regained consciousness. Unfortunately no post-mortem examination could be obtained.

This is the first case of vaginal hysterectomy that has died in my hands. The complication is, I believe, an unusual one, and for that reason I bring it before the Association.

Double parotitis is seen occasionally as one of the sequelæ of the infectious diseases, a distinctly septic disease. It has been stated that, following surgical operations, double parotitis is not a septic disease. We know that there is a distinct connection between the uterus and the thyroid glands, and very likely a similar connection exists between the uterus and the parotid glands. In mumps we have an inflammation of the parotid glands, and the most frequent complication arising in the progress of this disease is a development of orchitis and ovaritis. This fact certainly shows that there is a connection between the inflammation in the parotid gland and inflammation of the ovary and testicle. It is difficult to believe that the removal of the ovaries can produce a parotitis. Ovaries have been removed in such profusion in the last fifteen years that if such is the case we would be well aware of the fact. If parotitis has a peculiar tendency to follow the removal of the uterus, we should have sufficient data upon the subject to make us well aware of the fact.

I have seen single and double parotitis follow surgical operations and accompany the septicemia that sometimes follows miscarriage and labor. I have seen only the one case just reported of double suppurating parotitis. Double parotitis accompanied by sloughing of the glands must be a very rare affection.

It is not my intention to bring before you the literature of this subject. I am anxious to hear reported, in the discussion to follow, any cases of this disease that have occurred subsequent to abdominal operations.

DISCUSSION.

Dr. Edwin Ricketts, of Cincinnati.—Mr. President: In connection with this case I desire to report a similar one. Mrs. B., aged thirty-two years, mother of one child, four years of age, consulted me in May, 1895. A diagnosis of salpingitis was made, and the abdomen was opened on the 22d of May. This patient, with the exception of pelvic trouble, was in perfect health. The diseased appendages were removed. The ovaries were cystic; at the end of the second day a double parotitis made its appearance, although the operation was done as aseptically as it seemed possible to make it. The glands suppurated before they were freely opened. Convalescence, aside from the inflammation of the parotid gland, was not excelled in any case that has ever come under my care, and I was at a loss to know what was the cause of the trouble. There was not any tenderness of the abdomen. I will say that a glass drainage-tube was used for thirty-six hours, after which, the serum becoming straw-colored, the drainage-tube was removed. She finally recovered after a somewhat tedious convalescence, much to my surprise, and today there is no sinus in either parotid gland. There were no antiseptics used in the treatment of the case.

Dr. C. C. Frederick, of Buffalo.—I rise to report a case that I had the opportunity of observing in the practice of Dr. Mann, of Buffalo, a few years ago. It was a case of double parotitis following ovariotomy, in which the woman made a good recovery. There was no suppuration, but the glands were so enlarged and swollen that they looked as though they were on the verge of suppuration. I have forgotten the main facts in the history of this case, but, if I remember rightly, she had a simple ovarian cyst, which was removed, and the parotitis came on the fourth day after operation. There were no other signs of sepsis. The patient had a little rise of temperature which soon subsided.

Dr. James F. Baldwin, of Columbus.—I wish to report a case in which parotitis of the left side developed after a vaginal hysterectomy, coming on on the third day, accompanied by elevation of temperature and a great deal of swelling and pain, but which did not interfere with the convalescence of the patient. Suppuration did not occur. I was very much alarmed at the time, as the woman was greatly prostrated before the operation owing to continued hemorrhages, but she did well and left the hospital in three weeks.

Dr. Willis G. Macdonald, of Albany.—This matter of parotitis

associated with abdominal surgery, or with vaginal operations, is not, I take it, altogether a new one. It presents itself somewhat differently in the case reported by Dr. Ross. Those of us who are familiar with the early history of abdominal surgery in this country will remember the exceeding gravity which was placed upon this complication. With the earlier operators this condition was not an unusual or uncommon complication, only in this, the patients usually died before abscess had an opportunity to form.

I remember in my early hospital-work having seen a case similar to the one reported by Dr. Ross, which followed a supravaginal hysterectomy. As soon as the swelling in the parotid gland showed itself, the surgeon in attendance said to me: "Well, doctor, that is bad. I have never seen such a case that did not die." This case died. At that time it was a very fatal complication following abdominal operations. It is very different from the same occurrence in general surgical operations. I have seen parotitis associated with railway amputations of the thigh, or come on shortly after an amputation had been made, particularly where the so-called conservative plan of treatment was employed, saving as much sound tissue as possible and amputating very low down. With the natural subsequent suppuration from molecular destruction of the tissues of the limb, I have seen this condition followed by suppuration, and often simultaneously in both parotids, but first one, and then the other.

I have regarded it as a local manifestation of a general condition of sepsis, and I quite agree with Dr. Ross in every particular—namely, that such a condition is simply a local manifestation of a general septic infection; that these abscesses which occur in the parotids are no different than the smaller abscesses that we have in the kidney and in the liver. They come about through a septic embolism, carried in one case from the broad ligament, and in the other case carried into the parotid. We have a secondary nidus or point of infection, and we have abscess or inflammation. Associated with abdominal surgery, the only case which I have had personal experience with occurred during the last summer, but there was no suppuration. A young woman, about thirty years of age, had had an operation performed some months before by another surgeon for the removal of pus-tubes. There were dense adhesions, and in consequence of the intimate relation of one ovary and tube with the rectum only one ovary was removed and the other partially removed, and a vaginal drainage-tube was introduced at that time, as well as one in the abdomen. It was not so good an operation under the circumstances as it might have been. She did very well, left the hospital in about five weeks, and went to her home; but the sinus where

the abdominal drainage-tube had been placed did not heal, and subsequently she came under my care. On opening the abdomen, I managed to remove two large silk ligatures which evidently had been placed upon the tubes in their removal. I introduced a through-and-through drainage-tube into the vagina. Convalescence was slow. She had considerable fever, and about the second or third week after I had done the second operation both of her parotid glands began to swell markedly, so much so that her eyes were rather puffy about the lids. Her temperature was 103°; pulse 120 to 130. Under simple stimulation and local application of ice-bags to the parotid, after ten days the condition disappeared by resolution. The woman since that time has done very well. It is a condition rare in its way, and ought always be considered alarming to the surgeon, because it is simply an indication of a septic process which is generally disseminated through the system.

Dr. John Auld, of Chicago (by invitation).—I was very much interested in the narration of the case reported by Dr. Ross. I saw one case three years ago of non-suppurative parotitis limited to one side, which followed a perineorrhaphy and the removal of hemorrhoids. About the fifth day after the operation a left parotitis came on, followed by a high temperature—102.3°. It was Dr. Quine's case, and I operated on the patient for him. So far as I remember, there was no sepsis in connection with the external wound, and there was nothing which seemed to produce the irritation or septic condition. I have thought the disease in this case might be of nervous origin or reflex in its character. The profession does not believe that theory, and possibly there is nothing in it. It is a question in my mind whether it may not be demonstrated in the future that the non-suppurative form of parotitis may be of nervous origin.

Dr. H. W. Longyear, of Detroit.—I have nothing new to add with reference to parotitis after abdominal operations, as I have never encountered this complication. I saw parotitis when engaged in general practice in connection with typhoid fever cases, and I have always considered it a very dangerous sign. I would simply offer one suggestion in regard to sepsis—that relates to the use of the silk ligature. I believe it favors the retention of septic germs—at least it would seem so from the two cases reported, that of Dr. Ross and one of the others.

Dr. Macdonald.—The parotitis did not occur until two weeks after the ligatures were inserted, and I do not place much confidence in that.

Dr. Longyear.—But you had to remove the ligatures, and the point I make is, that if you had used the animal ligature future removal would not have been necessary, and your case would not have been complicated in that way. As it is absorbed, it does not leave a nidus

for the retention of germs. Germs may have been introduced when the ligatures were removed.

Dr. A. H. Cordier, of Kansas City, Mo.—I am thoroughly in accord with the views expressed by Dr. Ross, that parotitis is septic in character, and it occurs with such frequency in connection with operations involving the removal of the ovaries and Fallopian tubes that it suggests to us there must be something else back of the septic origin of the disease; that is, there must be a sympathetic relationship existing beween the ovaries and the parotid gland, and hence the resistance of the parotid gland to the invasion of septic material is lowered, and on account of this lowered resistance the septic material gains a foothold more easily in the parotid gland than elsewhere.

In regard to the use of ligatures, Dr. Goodell called attention to this in connection with operations for the removal of the appendages. He used catgut ligatures constantly, and he has written and said more about their use than any other man in this country in his work on gynecology. It seems to me that there must be some association between the ovaries and the parotid gland. We frequently have inflammation of the ovaries, or a cirrhotic condition following inflammatory trouble of the parotid glands.

Dr. A. H. Ferguson, of Chicago.—I would like to ask Dr. Ross what the condition of patient's mouth was at the time the inflammation of the parotid gland developed? We know that in scarlet fever, diphtheria, typhoid fever, and other diseases which are independent of infection of the tubes and ovaries, that extension takes place from the mouth to the parotid gland. Where parotitis follows operations upon the appendages, it is generally the result of local septic infection, after the mouth gets foul with pus-organisms. If the mouth is kept clean, inflammation of the parotid gland is not liable to take place, for extension along Steno's duct is prevented. I am inclined to think that the parotitis is due to extension of pyogenic germs from the mouth, even in cases of septicemia and pyemia.

Dr. Ross (closing the discussion).—I think there is ground for further study in this connection. We well know that there is a group of glands—the parotid glands, the thyroid glands, the submaxillary glands—that frequently become inflamed in the course of diseases that are likely to produce inflammation of the testicles; but as to inflammation of the ovaries we are not so sure. The testicle being outside, it can easily be seen. In diseases such as typhoid fever, we have orchitis; in scarlet fever we have, every now and then, the condition under consideration. Suppuration of the parotid gland is rather rare. We have inflammation of the submaxillary glands in these cases, but the connection

between parotitis and removal of uterus and ovaries must be decided at some future time by the physiologist. I am not capable of going any further with the argument.

Regarding the use of silk as a ligature, I may say that our friends from Detroit are wedded to the animal material, but I think I get as good results with the silk suture as they do with the animal suture, and I shall use the former, for one reason that in doing a vaginal hysterectomy with ligature it is one of the most important factors, if you wish to have success in your operation, that you should use strong silk that can be tied tightly. I have seen cases die from hemorrhage by the use of the clamp and ligature. When the ligature is used and hemorrhage occurs, it is probable that the ligature has not been tightly tied. Let me say that you can have strong silk without having large silk.

With reference to the remarks made by other gentlemen, I am very grateful to them for what they have said in connection with this subject.

In answer to the question of Dr. Ferguson regarding the condition of the patient's mouth, I will say I cannot state what was its exact condition, but the patient was in good health at the time of the operation, and the only condition noticed in the mouth was that she had considerable swelling of one of the parotid glands, and bulging in the pharynx, through which the pus burst. It burrowed behind the tonsil, and came out through the mouth. One abscess burst into the external ear and discharged itself in that way.

INTERMEDIATE TREATMENT OF PUERPERAL SEPSIS.

By A. B. MILLER, M.D.,
SYRACUSE.

In consequence of the views entertained by Semmelweiss, that puerperal sepsis is due to infection of the birth-canal and that the causation is largely from external influences or the introduction of poisonous material, carried to the parts through the uncleanliness of doctors, nurses, instruments, or dressings; and the investigations of Lister and Pasteur of antiseptics as germicides, the treatment by vaginal irrigation naturally resulted, which has so faithfully, conscientiously, and profitably been followed since the advancement of this theory.

Observation subsequently confirmed the views of Semmelweiss, but has not positively proven up to this time the true nature of the infection, its method of action and degrees of virulence differing in different cases; it has failed also to introduce a specific method of treatment. The teachings of Baker have entirely passed away, and yet we may learn much regarding the nature of the affection by closely studying his observations. While we do not have the blood-changes as a cause of the affection, we do have changes in the blood differing with the causation.

The toxemia or intoxication following putrefaction or chemical changes of the retained products of conception, while producing fever, malaise, and stupor, differs from the systemic symptoms due to heterogenetic influences, or the true puerperal sepsis. I say true puerperal sepsis, in contradistinction to the many conditions producing allied symptoms, and classed in this order in modern text-books and recent literature as follows: Suppuration resulting from traumatism of a pelvic tumor or structure, or a tumor of the abdomen in continuity or contiguity with the parturient womb; abscess

of the ovary, or suppurating Fallopian tubes. It is also possible for women in childbed to have the various specific fevers. These, too, I would in no way associate with puerperal fever, but would classify them as fevers complicating this process or period, and this fever as depending upon the micro-organisms.

Then puerperal fever and puerperal sepsis, which are used as synonymous terms, would demand but one causation, and, having determined the cause, the treatment would follow applicable to all cases. That it is difficult to determine the different conditions giving rise to fever is an acknowledged fact; but, as rational treatment can only follow an accurate diagnosis, it appeals to our reason with greater force.

To irrigate the vagina with antiseptics for a suppurating cyst of the abdomen, a pus-tube, or local peritonitis, certainly would be attended by disastrous results, and in too many cases is only appreciated at the autopsy, when "it was, as suspected, beyond the reach of medical or surgical interference." A statement of this kind ought not to ease the conscience of the attending physician, if it is balm to the ignorance of sorrowing friends.

True puerperal fever is the result of outside influences, micro-organisms, pyogenic microbes, carried to the patient either on the hands of the accoucheur or nurse, on instruments, dressings, irrigation, or having a natural habitat in some portion of the birth-canal, if this be possible. The germs or bacteria capable of producing infection are: streptococcus pyogenes, which is Fehleisen's diplococcus of erysipelas; staphylococcus pyogenes aureus, found in ordinary pus; staphylococcus pyogenes albus; staphylococcus pyogenes citreus; and possibly bacillus pyocyaneus and other bacilli.

These are the accepted views of the profession. Based upon this conclusion, the treatment advocated has been by antiseptic irrigation. In our maternities, by this method the mortality has fallen to a very small percentage, while in private practice, where the larger percentage of women are confined, the mortality has not been materialy affected. In the maternities these results have followed in consequence of the cleanliness which has been observed, while sepsis is not so thoroughly understood by the general practitioner, and the homes of the unfortunate ones are not adapted to aseptic surgical midwifery.

Antiseptics, while capable of doing good, may result in harm

when applied to this field of surgery. Bichloride of mercury, the strongest germicide, even when used in weak solutions, forms albuminates, arresting its germicidal properties, and destroys the epithelium of the vagina by its irritant action. It creates a raw field throughout the entire birth-canal for the better absorption of the poisonous excretory products of germ-action, if not producing death by its entering the system when used in concentrated solutions or frequent irrigations.

The germicidal action of the secretions of the puerperal vagina, as claimed by Krönig and others, if proven, certainly is opposed to irrigation and to antiseptics.

Bacteriology and the microscope have put us in possession of our present knowledge of the causation of this most dreaded disease, and if we succeed in contending successfully with it we shall have to base our treatment upon this knowledge. It is from this standpoint I have seen fit to introduce to this distinguished body of specialists my views under the title of "Intermediate Treatment of Puerperal Sepsis"—intermediate as a consequence of the long swing of the pendulum from antiseptic irrigation to the more recent advocated methods of arresting or dealing with the parturient womb when infection is confined to it. I refer to hysterectomy. It is with pleasure I reiterate the statement of Dr. Marcy, in his address before the Mississippi Valley Association: "Bacteriology has made possible a scientific basis for the formulation of the principles of wound-treatment which has revolutionized modern surgery." To no branch of surgery does this apply more forcibly than to injuries of the parturient canal, for here the conditions are most favorable for germ-development—warmth, moisture, and suitable culture-media being present.

In consequence of the degeneration of the human race and the teaching of the obstetrical art, women are placed in the recumbent posture during confinement and during their convalescence. Owing to the anatomy of the birth-canal only an imperfect drainage can be secured in this posture. The lochia from the womb form a pool in the vault of the vagina, and the cervical neck is constantly bathed by resting in the accumulation. So here we have the broth or suitable culture-medium and the warmth of the body to develop the micro-organisms of puerperal sepsis—an incubator the envy of our most modern bacteriologists. The amount of lochia retained as a result

of the most dependent position of the vagina being the vault may vary from a slight amount to several ounces. Let us deprive the field of infection of some of its elements of germ-development, and Nature will restore the abraded parts to health.

While some authors give the seat of most frequent affection as the placental site, it seems more than probable that the infection must start in the vagina, the most natural place for depositing the germs by interference, and then may extend upward to the uterine cavity.

If the vagina or cervix is lacerated and infection is present, clinical observation has taught us that these parts are covered by diphtheroid deposits, local evidence of germ-poisoning. As the discharges must accumulate in the vaginal cup, if micro-organisms are carried to the birth-tract the cervix will be the most probable seat of infection.

The lochia (a natural result of childbirth) and the warmth of the body, two elements of germination, are present; but it is within our power so to limit the field of culture that the reparative forces of the infected patient will be stronger than the infection. If the parts can be kept dry, development of micro-organisms will be arrested and sepsis can no longer take place. This can be done by packing the birth-canal with absorbents, and changing as soon as indications of infection are again present, as indicated by rise of temperature and increase in pulse-beat. To obtain a dry field, or arrest the development of the micro-organisms where infection is present or suspected, I would proceed as follows:

The usual symptoms of puerperal sepsis being present (high temperature, rapid pulse, increased respiration, anxious facial expression, arrest of lochia or otherwise), after securing a culture for development, all aseptic precautions being observed, the vulva and the vagina should be cleansed as for vaginal hysterectomy (avoiding the use of the brush) by means of gauze-pad, and a bland irrigating fluid to wash away the already infected mucous secretions. An examination of the uterine cavity for retained products of conception should be made by means of finger and curette, the latter used when indicated, and the cavity then thoroughly wiped out by pledgets of absorbent cotton saturated with sterilized water or antiseptic solutions. After thoroughly cleansing, the parts should be wiped as dry as possible with sterilized cotton carried into the uterus

by means of dressing-forceps, the vagina dried and smeared over with sterilized vaseline. With the patient on her back, legs flexed, the perineum should be depressed by speculum. The anterior wall of the vagina is elevated, the cervix caught in the grip of a flat-toothed forceps sufficiently wide not to tear the parts, and securely held until the cavity of the uterus is filled with some absorbent material—gauze, lamp-wick, or disks of cotton. The uterus is then released and permitted to rise in the abdomen. The vagina is firmly packed with disks of sterilized cotton arranged concentrically about the cervix, exercising all the thoroughness possible, until the cul-de-sac is filled, and continued until the ostium is reached. The temperature will subside immediately, unless it may be following the first packing, when, in consequence of the systemic condition and the length of time employed to carry out the technique thoroughly, slight shock may be induced.

Owing to the presence of moisture and the impossibility of making every part absolutely dry, as in lacerations of the cervix, some symptoms will remain, but they may be compared to a calm after a storm.

As soon as the pulse-beat increases and the temperature begins to rise, with symptoms of restlessness, and the facial expression becomes anxious, the packing should be removed and renewed, whether it be three hours, six, or twelve, as the dressings are saturated and infection is again taking place.

As moisture is always present, treatment will have to be persevered in until the nutrition of the parts is restored and the abrasions or lacerations are healed, or sufficient reparation has taken place to admit no longer of infection. It will not be possible to rid the canal of all pyogenic organisms until the tract is again covered by healthy membrane; treatment is to be continued until abatement of all symptoms.

In my experience the treatment has not been painful to the patient nor required an anesthetic. I would advise that one be administered at the time of first dressing, if the parts cannot be thoroughly cleansed and packed otherwise. The same attention should be given to the drawing of urine and condition of bowels as in any other pelvic affection.

I append one history, which I hope will be as forcible as many and take up much less time of the Association.

Mrs. H., aged thirty years, primipara, was confined on February 25th; labor normal, lasting seven hours; temperature and pulse normal. Patient slept well first night. Health good previous to confinement.

February 26th: 7 A.M., temperature 99.4°; pulse increased in rapidity, number not given; ordered small doses of aconite. 7 P.M., temperature 100°.

February 27th: 2 A.M., temperature 100.4°; patient awakened with slight chill and complaining of pain across lower part of the abdomen. 8.30 A.M., temperature 103.8°; aconite was continued by physician in attendance, and phenacetin, five grains, ordered every three hours for five doses, commencing at 7.30 A.M. Epsom salt was given in one-ounce doses five times during the day. At 10.30 P.M. bowels moved, large amount of flatus passing. Vaginal discharge arrested entirely between 12 and 2. Intrauterine douche ordered at 1.30 P.M.; several shreds and small clots passed.

At 7.30 P.M. I was called in consultation. Temperature of patient 104°, pulse 145, respiration 30; face flushed and expression anxious. Patient was prepared by the method advocated above, asepsis being observed as thoroughly as possible. On depressing the perineum a laceration was found two inches long on the vaginal mucous membrane, running obliquely and covered with a diphtheroid deposit. On exposing the cervix it was found to be deeply lacerated bilaterally and through the anterior lip. This also was covered with diphtheroid deposit. A culture was obtained and submitted to a bacteriologist.

After cleansing the birth-canal and curetting the uterus the whole tract was thoroughly packed with sterilized gauze. Patient being in an exhausted condition, slight shock followed. Strychnine was ordered given, with tonic doses of quinine.

February 28th: 4.30 A.M., temperature 101°, pulse 106; doctor in attendance removed the dressings in the morning and repacked. Temperature rose again in the afternoon to 103° (pulse did not exceed 108). Rise of temperature was probably due to inability to pack as thoroughly as when more assistance was at hand. At 7 P.M. I was again called. While the patient was much more comfortable than on the previous day, the dressings were changed, exercising all the care possible, and each time packing as thoroughly as at first.

Temperature the following morning, March 1st, 99°, pulse 90; evening temperature 99.4°, pulse 78. Packing removed and reapplied at 8 A.M. and 7 P.M. The breasts filled with milk; patient sleeping well at night without anodyne. Nourishment taken freely.

March 2d: Temperature again rises to 102°; pulse 102 in the morning. On removing dressings I found them thoroughly saturated. Temperature fell to 101° after repacking and rose to 103° in the afternoon. Dressings changed at 7 P.M., temperature falling to 101° pulse 96.

March 3d: 6 A.M., temperature 99°, pulse 84. Dressings changed at 8.30 A.M. and 7 P.M.; temperature 100°, pulse 92.

March 4th: 6 A.M., temperature 99.1°, pulse 84; dressings changed at 7 A.M., only one dressing being used; temperature 101° at 8 P.M., pulse 100.

March 5th: At 7 A.M. temperature 98.2°, pulse 80. At 2 P.M. profuse watery discharge; temperature rose to 103.8°, pulse 120. The patient living in a neighboring village, I was informed by telephone of her condition. The dressings were ordered removed and the parts irrigated. Temperature dropped to 102°, pulse 100. At 7.30 P.M. I again packed. Temperature at midnight 100.2°, pulse 90.

March 6th: 6 A.M., temperature 98.2°, pulse 75; dressing changed. At 7 P.M. temperature 99.8°, pulse 84; dressing changed at that hour.

March 7th: Morning temperature 98.5°, pulse 78. Dressing changed 7.30 P.M.; temperature 100°, pulse 84; slight discharge.

March 8th: 11 A.M., temperature 90.2°, pulse 76; dressing changed at 5 P.M. by attending physician, temperature 99.5°, pulse 75.

March 9th: 8.30 A.M., temperature 98.2°, pulse 76; dressing changed by attending physician. At 7.20 P.M. I again changed dressings, but did not pack the uterus; temperature 98.3°. The parts presented a healthy appearance.

March 10th: Dressings were discontinued and the tract irrigated with sterilized water to insure cleanliness. Temperature remained normal after this date.

The patient was advised to call at my office a few months after, to make appointment for the repair of the badly lacerated cervix. The examination showed no trace of laceration having been present.

Involution had taken place to correspond with the time elapsed, and the patient expressed herself as being perfectly well. Report of bacteriologist showed pure streptococcus culture.

By the method of treatment advocated the results have been attained by shutting off the field of infection or limiting it, and reducing the micro-organisms in number by removing their culture-media. This treatment might be attended with difficulties in the hands of the general practitioner unaccustomed to gynecological technique. I believe it would be difficult for him to pack the parts with sufficient care and thoroughness to prevent infection from spreading, until trained to do so. He would find it still more difficult to do a hysterectomy.

As a result of this reasoning I have devised a false vagina or vaginal drainage-tube to reduce the infection to a still more limited field and render the subsequent care less difficult. The preparatory treatment is to be the same as for the absorbent dressings, thoroughly cleansing the vagina and uterine cavity, the walls of the vagina to be smeared with vaseline, and a cup with a handle attachment placed over the cervix so that the discharges from the uterus cannot drain into the surgically prepared vagina during the introduction of the drainage-tube.

To facilitate the introduction of the tube and the removal of the cervical cup I have had it made in sections. The lower or posterior part is made to conform to the perineum, posterior vaginal wall, vault of the vagina, and lateral walls, and is introduced first. The cervix is carried upward and forward by means of the cup until the bowl of the tube has passed into the cul-de-sac, when the cup is removed and the cervix falls into the tube.

The upper or anterior portion is made to slide in grooves on the upper part of the posterior portion, and is readily adjusted by elevating the anterior vaginal wall. When in position it fits about the cervix anteriorly and keeps the vaginal wall from prolapsing. It is hollowed out on the upper surface to prevent injury to the urethra. A canal is thus made to conform to the vagina, through which the uterus can be packed readily, if required, by means of curved dressing-forceps, and the cervix can be kept dry by applying beneath and around it sterilized cotton. This can be done by the nurse in attendance as often as required, and with the same

facility that the doctor would apply a pledget beneath the cervix through the lumen of the speculum.

It is my belief that after thoroughly cleansing the cavity of the uterus, owing to its position to facilitate drainage, it would not require packing if the lochia were taken up when discharged and moisture not permitted to gather about the cervix, arresting infection at this point. It will require experience to prove this belief.

In conclusion :

1. Suspected infection of the birth-canal should be confirmed, when possible, by a bacteriological examination of vaginal secretions, and every means of differentiating from other affections be resorted to, that they may be treated rationally either by medicine or surgery.

2. Irrigation and antiseptics destroy the nutrition of the parts when continued, and, furnishing increased moisture, improve the field for the development of micro-organisms, aside from the danger of death resulting from the antiseptic used.

3. That the birth-canal can be kept comparatively dry by absorbent dressing, removing the culture-media and arresting the development of germs and infection until the abraded parts have healed.

LITERATURE.

Noble, Charles P.: Celiotomy for Puerperal Septicemia and Peritonitis. American Gynecological and Obstetrical Journal, April, 1895.

Winter, John T.: What is the Cause of Puerperal Fever? American Gynecological and Obstetrical Journal, February, 1895.

Ill, Edward J.: The Importance of Early Recognition and Treatment of Septic Puerperal Endometritis. American Journal of Obstetrics, vol. xxx. 1894.

Krönig, B.: Bactericidal Properties of the Lochial Secretions of Pregnancy. The Lancet, March, 1895.

Noble, Charles P.: Puerperal Cellulitis and Puerperal Peritonitis. American Gynecological and Obstetrical Journal, January, 1895.

Parvin: Science and Art of Obstetrics, 1895.

Marcy, Henry O.: Modern Surgical Technique. Medical Record, March 2, 1895.

Wright, Adam H.: Should Antiseptic Vaginal Douching be made a Routine Practice during the Puerperium? Transactions of the American Association of Obstetricians and Gynecologists, 1894.

Chase, Walter B.: The Brooklyn Medical Journal, December, 1894.

THE INDICATIONS FOR OPERATION IN PUERPERAL SEPSIS.

By LEWIS S. McMURTRY, M.D.,
LOUISVILLE.

The efficiency of aseptic methods in preventing infection during the puerperium has been demonstrated by the recorded results of maternity hospitals. Notwithstanding the general acceptation of this fact, puerperal sepsis is very common at the present time. The mortality continues great, and in a large proportion of the cases of chronic pelvic inflammation requiring operative treatment the disease has originated in an infection during the puerperium. When we consider how incomplete the statistics of this subject are in the towns and country districts, as well as how unreliable are the same in our large cities, we can form some idea of the heavy mortality of puerperal sepsis. Thousands of women die annually of this disease.

Since operative surgery a few years since disclosed the various lesions of pelvic disease, it has been known that pregnancy and the puerperal state may be complicated by pre-existing inflammatory diseases of the uterine appendages, tumors, and septic accumulations inside the pelvis. Chronic and circumscribed disease of this character may be converted into acute and diffuse inflammatory conditions by the trauma of labor. Puerperal sepsis may in this way be the result of pre-existing disease. This class of cases must necessarily be small, since women thus diseased are, as a rule, sterile. That such cases necessarily come within the scope of operative treatment will be generally conceded. The indications for operative interference in this class of cases will receive consideration in the course of this paper.

The bacteriology of puerperal infection has received most careful study by Bumm and other observers, and all who have studied the clinical manifestations of puerperal sepsis have remarked upon the

diverse character of the disease in a given group of cases. The septic process may be limited to the uterine cavity, broad ligaments, and adjacent peritoneum, with moderate systemic infection ; or the general system may be profoundly infected, with comparatively insignificant local manifestations. According to Bumm, the organisms which are the active agents in the infective process may be shut off by an underlying area of granulations after becoming established in the uterine mucosa ; or this barrier may be wanting and the germs penetrate directly the lymph-spaces and diffuse themselves rapidly throughout the lymphatic system. In this way, both by the character and intensity of the infection and the resistance of the tissues, it is determined in a given case whether general infection will predominate and local manifestations be secondary, or the opposite. After the septic process becomes established along the utero-vaginal canal it may extend to the peritoneum either by the continuity of surface furnished by the mucous membrane, or septic germs may traverse the veins and lymphatics so richly distributed to the invaded tissues.

Septic endometritis presents diverse lesions and products corresponding with the clinical varieties of puerperal sepsis. A profound degree of systemic infection may exist without extensive gross lesions at the site of infection. Again, putrefactive changes may obtain within the uterine cavity with the development of toxins, which being absorbed beget that form of systemic infection known as sapremia. For practical purposes cases of puerperal sepsis should be considered in two general divisions : (1) those cases wherein systemic infection is marked and predominant, with comparatively insignificant local manifestations ; and (2) those wherein the local inflammatory lesions are conspicuous and general systemic infection less marked and secondary.

In the first class of cases the septic focus within the uterus, by rapid absorption through lymphatics and veins, overwhelms the system with infective products. The lymphatic system is very active in this process, and so rapid is the diffusion of septic material that the entire system may become infected in a few hours. The inflammatory element about the uterus and adnexa is not appreciable in many instances. The granulating area previously described is said to be absent in these cases. The discharge from the uterus is usually slight and is seldom putrid. The abdomen is soft, and

vaginal examination will elicit no signs of inflammatory deposits about the uterus or its adnexa. In several cases observed by the writer lymphangitis was marked in both lower and upper extremities, so that the slightest movement would produce extreme pain. The use of curette and intrauterine douche in these cases avails nothing. The entire system is quickly saturated with septic products, which cannot be eliminated or counteracted by any operative procedure. These cases have always impressed my mind as analogous to other systemic infections, such as syphilitic, wherein it avails nothing to excise the point of infection after the organisms have been diffused throughout the system. When the diagnosis is made the mischief has already been done.

In the second division of cases, as indicated, localization is marked and a variety of lesions may obtain. This large class of cases affords wide scope for local treatment, and I would lay down this general principle as the basis for deciding the question of operative interference, viz., that lesions demonstrable to the skilled touch, and local signs of known value, together with general symptoms of recognized significance, should invariably form the basis of such decisive action. In a word, the recognized principles of diagnosis ordinarily applied to inflammatory diseases of the uterus, its adnexa, and the pelvic peritoneum should, with all due modification, be applied to puerperal sepsis. No operation should be projected upon the indefinite data of pulse and temperature or time requirements.

In all cases of puerperal sepsis the most careful examination of the pelvic organs should be made. Should such examination demonstrate the presence of pre-existing disease, as already indicated in this paper, the indications for operation should be carefully weighed in the balance of mature surgical judgment and experience. A pre-existing pus-tube, a uterine fibroid, or ovarian dermoid, converted by the trauma of labor into activity as an infecting source, should be treated by prompt resort to abdominal section.

Septic endometritis, with or without putrefactive changes in retained clots and débris, should be treated by cleansing, antisepsis, and drainage. Thorough intrauterine irrigation and drainage in appropriate cases may quickly arrest the septic process. I am convinced that curettage is much too extensively applied in cases wherein the septic focus is limited to the uterine cavity. The granulating-zone described by Bumm may be broken through and infec-

tion promoted by curettage; also, closed sinuses and veins at the placental site may be reopened and septic material diffused by this operation. I have seen repeated application of the curette in cases of puerperal sepsis signalized by repeated chills and rising pulse and temperature, marking the invasion of new areas of infection. I am convinced that the indiscriminate use of the curette in cases of puerperal sepsis is most harmful, and that in this way Nature's barriers to increasing infection are torn away. Thorough irrigation and drainage of the uterine cavity will meet all the requirements of local treatment in septic endometritis. Plugging up the uterine cavity after the method known as gauze-packing is positively contraindicated by the simplest surgical principles. Drainage should be facilitated and not obstructed.

Purulent salpingitis, ovarian abscess, and suppurative peritonitis, by progressive steps, may obtain very rapidly in puerperal sepsis, the process extending both by continuity of surface and by vascular routes. The associated peritonitis may be diffuse or circumscribed, and its office as a conservator must be recognized. Here the most deliberate judgment must be exercised in determining the time for resorting to proper treatment by abdominal section. The time for operative interference and the extent to which the operative procedure is to be carried in these cases require the exercise of sound judgment in every case. The following case occurred in my practice last year and illustrates the most severe and extensive lesions of the form of puerperal sepsis under consideration :

Age of patient, twenty-one years. Confined July 26, 1894, and developed peritonitis. After an acute illness of several weeks the inflammatory process seemed to abate and her condition was hopeful. During the latter part of August her condition was complicated by abscess of the breast, which required incision and gave much distress, at the same time adding to the exhaustion of an already enfeebled condition. I saw the patient in the latter part of September in consultation with the family physician, Dr. Coleman Rogers. For several weeks preceding the condition was one of seeming improvement, with recurrent attacks of violent pain necessitating repeated doses of morphine, accompanied with fever and sweats. These exacerbations marked the invasion of additional areas of peritoneum by the inflammatory process. Dr. Rogers had utilized purgatives, as well as all other non-surgical resources, in the treat-

ment, and requested a consultation with a view to operative interference. An examination disclosed the most extreme and advanced lesions of puerperal pelvic inflammation. The uterus was bound down upon the floor of the pelvis, the fundus in Douglas's pouch, and the rectum almost occluded by its pressure. All the pelvic viscera were fixed, being bound by extensive deposits of organized exudate. There was an indistinct sense of fluctuation in the lateral pelvic spaces when the bimanual touch was applied. The patient was pale, feeble, and emaciated, racked with daily exacerbations of pain and constant fever.

On October 6, 1894, during the eleventh week of illness, the patient was removed to the infirmary, and on the following morning abdominal section was made. Ether was very cautiously given and the operation performed as quickly as thorough and careful work would permit. On opening the abdomen (suprapubic) the omentum was found agglutinated to the intestines, roofing in the pelvic viscera. Releasing this and working a track of cleavage with two fingers through the coils of intestine, the pus freely poured out of the incision. In separating the adhesions at the floor of the pelvis and enucleating the disintegrated tubes and ovaries (applying only gentle force cautiously) my index-finger penetrated the uterus. Recognizing this, I forcibly released that organ (observing the utmost care not to open the rectum, to which it was adherent) and brought it up with the suppurating appendages. The body of the uterus was friable, breaking down under slight force; the appendages were mere abscess-sacs. Having separated adhesions so as to release the intestine, I did a complete hysterectomy, removing uterus and appendages. The peritoneum was thoroughly douched with several gallons of warm water, a drainage-tube placed, and the incision rapidly closed. The operation was completed in thirty-two minutes. The anesthetist had already administered stimulants hypodermatically. The patient was put to bed without any pulse that we could detect in the wrist, though the heart was acting with great rapidity. The usual stimulants subcutaneously, with dry heat to the surface and extremities, were persistently applied, and the patient gradually rallied. The pulse was rapid and small for three days, then gradually improved. The drainage-tube was removed on third day, and healing was prompt and complete. The patient rapidly gained strength and flesh, and is now a picture of perfect health.

The most important form of puerperal sepsis in relation to operative interference, as well as one of the most serious conditions resulting from sepsis, is that of diffuse septic parenchymatous metritis and purulent metritis. I have seen two cases where operation in the fourth and sixth weeks respectively after labor demonstrated this condition. In both cases the presence of pus in the pelvis being evident, I believed it to be localized about the uterine appendages. When the uterus was exposed by abdominal section pus-formation in the uterine walls was apparent to the eye, and multiple abscess-cavities existed throughout the organs. Recovery followed hysterectomy in both these cases. Septic metritis may be marked by a soft and boggy uterus, as illustrated in the case reported in detail, or multiple pyemic abscesses may riddle the substance of the organ, as just described. The only treatment for these cases is hysterectomy, the selection of the vaginal or suprapubic route being determined by the complications of individual cases or the preference of the operator. While cases of purulent metritis are comparatively rare, I am confident that they are more common than generally believed, and, as observation increases and diagnosis improves, this otherwise fatal form of puerperal sepsis will be more frequently recognized and cured by hysterectomy.

In conclusion, I would allude to the class of puerperal cases wherein the local symptoms are those of diffuse peritonitis without localization of lesions, but where the uterus is presumably the focus of infection. This class of cases has recently been discussed extensively in relation to treatment by hysterectomy. Empirical operations in surgery are likely to prove more disastrous than similar methods of treatment in medicine. The gravity of such cases may often justify exploration and drainage, but the more extensive operation of hysterectomy will almost invariably prove disastrous.

DISCUSSION ON THE PAPERS OF DRS. MILLER AND McMURTRY.

Dr. W. E. B. Davis, of Birmingham.—Mr. President: Though I was very much interested in the papers that have been read, I do not believe that Dr. McMurtry is right in saying that gauze is not good in the uterus.

Dr. McMurtry.—If Dr. Davis will pardon me, I did not say that exactly. I condemned gauze-packing, it is true. I believe in laying it in lightly, but not in packing it, and so meant to be understood.

Dr. Davis (resuming).—I believe Dr. McMurtry is right in condemning the frequent use of the curette soon after delivery, or shortly after an abortion. He has given his reasons in a lucid manner. I think it is well to swab out the uterus with carbolic acid. This treatment should be followed by gauze-packing. The curette should be used in some cases.

Dr. Ricketts.—With or without dilatation?

Dr. Davis.—The uterus is generally dilated in a puerperal case; still if it is not, it ought first to be dilated.

In puerperal sepsis where the temperature runs high patients usually die in from a week to ten days, and I believe surgery offers very little hope for them. In cases where there is local trouble much is accomplished by surgical treatment, but in those cases where we can find no tangible disease, where there is no enlargement in the region of the tube and ovary, surgical interference offers very little encouragement. I think it is exceptional that we should do an abdominal section within the first ten days after confinement. These cases stand a better chance to recover without such an operation than with it. To be sure, some cases might be saved that would not otherwise get well, but I believe we will lose more patients by an operation in this class of cases within the first ten days after delivery than we would without it. I do not include in this category cases where a dermoid cyst or a pus-tube existed previous to delivery, and where there have been traumatism and peritonitis. Such cases should be treated surgically and with promptitude.

Cases of general peritonitis have been reported as cured by some surgeons—cases where gallons of pus have been removed from the abdomen. Of course, they may have succeeded in saving their patients after having removed a gallon of pus, but such cases should not be considered under the head of general suppurative peritonitis. It is true the abdomen may be nearly full of pus and the patient get well, but there will be a part of the cavity that is walled off. It takes forty-eight hours or more for the fluid in the peritoneal cavity to become purulent. In those cases reported as cured evidently the pus has ruptured into the general cavity during the operation or just before it, and thus there appeared to be a general peritonitis.

I desire to repeat my belief that the cases of puerperal sepsis that are amenable to surgical treatment are those that are operated on some weeks after delivery. In a large number of these cases we should do

simply a life-saving operation, by evacuating the pus through a vaginal incision, and then later, if the patient is not cured, remove the tubes and ovaries, and even the uterus, if necessary. I think, however, it is seldom that the uterus should be removed. It is a very serious matter to resort to an abdominal section in septic cases. They do not stand surgery well, and we can save a large number of them by making a vaginal incision and later a more radical operation if it is shown to be necessary.

Dr. Herman E. Hayd, of Buffalo.—This is an exceedingly interesting subject to discuss, and in many respects a difficult one. In the first place, it is not possible for us to describe a given line of treatment in puerperal sepsis, since it is dependent upon so many different conditions. To say that the intrauterine douche has not saved a great many lives would be ridiculous, because I am satisfied there are a great many cases of puerperal sepsis, such as sapremia from the breaking-down of blood-clots or a loose piece of the secundines, in which the intrauterine douche is all that is necessary and has often saved life. To say that the curette should not be used is equally ridiculous, because there are many cases of puerperal sepsis due to a septic endometritis which can only be cured by the curette; or a few cotyledons of the placenta may often remain at the placental site and break down, and, when they cannot be removed by the fingers, must be scraped away with the curette, protected and directed by the finger in the uterus. One must use a large, sharp curette with a good angle, so as to get under the piece and, so to speak, lift it up; then thoroughly wash out the uterine cavity and pack loosely with iodoform-gauze. It is doubtful whether the uterus is satisfactorily drained with gauze. But I use the gauze, first of all, to keep the os open; and, secondly, to help to maintain the uterus in a good position so as to favor drainage. Often the uterus tips backward or forward, and a gauze-pack not only helps to support it, but stimulates more satisfactory involution.

There is still another class of cases where douching and curetting do no good, and there we must think of an abdominal section or even a hysterectomy. Often there is an old pus-tube brought into activity and a localized suppurative peritonitis, which, if not treated by abdominal section, must be punctured and drained throught he vagina. I have had two such cases where the condition of the patient was such that no radical operation could be thought of, yet both did well by vaginal drainage. Therefore each case must be treated by such measures as will get at the cause of the sepsis.

Dr. William Warren Potter, of Buffalo.—The subject presented for consideration in these two excellent papers has many interesting

viewpoints for profitable discussion. To but two of these do I desire to address myself at this time—namely, first, the fact that the term puerperal fever, which formerly prevailed in text-books and in the lecture-room, scarcely found expression in either paper. This, to my mind, is a significant fact. It indicates the trend of the period toward a truer pathology and, hence, toward a more efficient line of treatment.

The term puerperal fever is misleading in etiology, pathology, and treatment. Let us abandon it for the better one that we find generally used in these papers—puerperal sepsis. For some time past, I have been of the opinion that there can be no puerperal fever except through infection, and this conviction is growing stronger with increased observation and experience. It is true that many men of large experience can be found who are inclined to challenge this statement, but their number is steadily diminishing as evidence accumulates.

If the histories of so-called puerperal fever are carefully traced, I feel very sure that somewhere and at some point infection will be found an underlying cause—an infection that is often, unfortunately, carried into the parturient canal by the obstetrician, or through his want of attention to proper precautions; or, again, to the environment of the puerperal woman. In either of these conditions of cause the disease ought to be prevented; hence, I affirm that the question of great collateral interest for discussion in connection with this subject is one of preventive medicine—the important question of aseptic midwifery. I hesitate not to declare that if aseptic midwifery were practised in every case—absolute asepsis I mean, of course—there would be no longer puerperal fever, nor would there be ophthalmia neonatorum to contend with. I am further grounded in the belief that methods of practising aseptic midwifery will be so perfected in the not distant future as practically to stamp out these two direful diseases.

The second point to which I would invite attention is that pertaining to gauze-packing. Here, again, there is ground for honest differences of opinion, and very excellent men will be found recorded on each side of the question. I confess that I do not like the method, and I venture to offer an objection to its employment additional to those usually mentioned. If the uterus is packed with gauze, it tends to prevent that essential shrinkage so necessary to shut up the avenues of septic invasion. If, in general, packing the womb stimulates the contraction of its muscular fibres, not so with the septic puerperal uterus already atonied if not paralyzed by tissue-changes and septic saturation; it therefore becomes important, if it has been determined to pack the uterus at all, to do it in such a manner as shall not interfere with its essential shrinkage. In most cases it will be desirable to dress simply

the interior of the womb, after having performed whatever operation is indicated, with a layer of gauze lightly spread over its interior surface and allowed to hang out through the os into the vagina, to promote drainage.

In conclusion, permit me to accentuate the difference in effect that gauze-packing has upon the septic uterus and the non-septic womb. The latter responds quickly to its presence and influence when used for hemorrhage or to stimulate contraction. The former is a sodden, boggy viscus without efficient muscular contractile power, and when packed with gauze the atony is increased by its presence.

Dr. Walter P. Manton, of Detroit.—If I have understood him aright, it seems to me a great pity that so brilliant a Fellow of this Association as Dr. McMurtry, one whom we all admire, should be so misguided. There are a number of points in his paper to which I shall take serious exception. I suppose that a man's experience is derived very largely from the people in the community where he resides. If there is such a tremendous amount of puerperal septicemia prevalent today, as Dr. McMurtry would have us believe, I am very sorry for the people in the city of Louisville and its vicinity. I have never had in my private practice a case of puerperal septicemia; I have, however, occasionally seen cases in consulting-practice. Those that I have seen have largely been among patients who had been delivered by midwives, amid squalid surroundings, and who had none of the conveniences, the attention or care which such women should have. I do not think the statistics of the city in which I reside will show that puerperal septicemia is on the increase; it is rather on the decrease.

In regard to gauze-packing, Dr. McMurtry says he would pack the uterus lightly with gauze in order to drain. I maintain, and have for a number of years, that drainage is not the sole object of packing the uterus. Contrary to what Dr. Potter has said, the presence of gauze, tightly packed into the uterus, does not paralyze the uterine muscle, but stimulates it to contract, and in that way the whole organ is lessened in size, and, as we well know, a well-contracted uterus is not an organ that absorbs septic material. We may, of course, get absorption from other points, as lacerations of the cervix and the like.

I was much interested in Dr. Miller's paper because he corroborates in the main my own experience in the matter of treating these cases. The treatment which I have carried out for a number of years I presented in a paper read before the Michigan State Medical Society three or four years ago, under the title of "Late Puerperal Infection." I believe that, if the curette is properly used, it is absolutely devoid of danger. Of course, in careless hands it may do considerable damage.

If we take a case, for instance, where there is a local focus in the uterus from which septic material is disseminating itself through the body, and we remove this septic nidus by curettement, if we wash out the uterine cavity thoroughly with an antiseptic fluid, then dry the cavity as best we can and pack thoroughly with iodoform-gauze, and afterward fill the vagina lightly with the same material, I have yet to see, in my own experience, a case thus treated that has not gone on to perfect recovery. I think the gauze acts in three ways, perhaps four: (1) Iodoform-gauze acts as a mild antiseptic. (2) The iodoform has a slight styptic quality which prevents hemorrhage. (3) The packing stimulates contractions of the uterus, and (4) drainage is obtained. The curetted surfaces are also protected by the gauze, and further absorption prevented. I have not as yet seen the necessity of repacking the uterus when the primary curettement, etc., has been carefuly done, and I can hardly understand the propriety of such a procedure in the class of cases where this method of treatment is indicated; the gauze can usually remain in the uterus without disturbing the patient's pulse or temperature at all for from three days to a week. After that, by means of antiseptic irrigations, I have accomplished all that is necessary. If a patient becomes so infected as to necessitate the removal of the uterus, as in cases of multiple abscess of the uterine walls in pre-existing pus-tubes or dermoid cysts, etc., it should be done; but I am speaking of the uterine condition alone. If the trouble extends to a point where opening the abdomen and removal of the uterus becomes necessary, I think there will be found to be a very small percentage of the cases which will recover from such operation. These cases are generally, as pointed out by Dr. Davis, hopeless ones. We can do little for them. The nervous system is so paralyzed by the poison poured into the blood that there is nothing further to be done. Dr. Price has saved a good many women who have become infected by ruptured pus-tubes, but I am not speaking of that class of cases, but of those where the condition in the uterus alone necessitates hysterectomy. I think these cases, if they are taken early enough, and the treatment advocated by Dr. Miller is carried out, can in nearly every instance be saved, and the possibility of the necessity of an abdominal hysterectomy can be obviated.

Dr. H. W. Longyear, of Detroit.—Notwithstanding the remarks made by my friend, Dr. Manton, I quite agree with the essayist, Dr. McMurtry, and I do not think he is misguided, especially in regard to gauze-packing. His remarks on this subject are sound. It is a proceeding that can be used with advantage to prevent uterine hemorrhage, and it seems to me absurd to use it also to facilitate discharge from the uterus. I do not believe it is common sense. I think the uterus packed

full of gauze will prevent the flow of mucus, blood, and serum, yet will allow more or less serum to come away; but the fragments and blood-clots will certainly be retained. My plan, after the treatment of the interior of the uterus, by whichever way I choose, is to drain the uterine cavity thoroughly by means of a self-retaining tube, or a few loops of stiff silver wire, which will keep the os open. As a rule, there is flexion in these cases, and anything which keeps the cervical canal free should be used. I do not believe in even applying a strand of gauze, for I think it tends more or less to block up the canal. I believe in leaving the canal open and making it stay so with a clean silver or glass tube, which will not irritate the parts in the least; the patient will awaken from the anesthetic feeling perfectly comfortable—a great contrast to the agony caused by a uterus tightly packed with gauze.

I think the rules laid down by Dr. McMurtry for operative interference are sound. We should observe the same rules in diagnosticating cases for operation after confinement that we do in other cases. If we cannot find any positive signs in the abdomen to indicate operation, then we should not perform it. Rise of temperature alone should not be a sufficient indication for operative interference. I believe that doctrine is sound.

Dr. William H. Myers, of Fort Wayne, Ind.—I think it would be well if the gentlemen would define pyemia and septicemia. Pyemia, in the language of Déspine, is "purulent absorption," and as the septic absorption may be confounded at the bedside with the pyemic process we are at once compelled to define the distinctive characteristics of each. To Burdon Sanderson we are indebted for the following clear definition of pyemia: "It is a process which has a beginning and a termination of a definite kind—a centre of origin, lines of diffusion, and secondary results; it is developed and goes on and on to its fatal end." No one would expect favorable results in any surgical procedure if there exist such a pathological lesion as is here described.

Septicemia has no necessary connection with any local process; it is therefore not developed, but is a constitutional disorder of limited duration, produced by the entrance into the blood-stream of a certain quality of septic material. I believe that a sharp line of distinction between these two conditions exists.

If we view a lying-in woman as she really is, we see in her a peculiar constitution ready to receive poisons and ready to promote these to fermentation and so on to a disastrous issue.

Richardson speaks of this condition of the woman, that she is in a nervous state, supplying from her own potential energy the movements of the fetus. While we are perhaps all inclined to look at the hetero-

genetic origin of pyemia and septicemia, we may ask if some of these cases may not be autogenetic, where the woman is herself the factor and subsequently the recipient of the poison which Mr. Hutchinson correctly calls "poisoning immediately from the patient herself."

Dr. C. C. Frederick, of Buffalo.—This subject is one that has interested me very much, because it has been my fortune to have charge of two obstetrical clinics in which (as well as in private obstetrical practice) I have seen a good many cases of puerperal septicemia in consultation in the last six or eight years, and I have some ideas of my own derived from experience. In the first place, I think Dr. McMurtry is right when he says that there are two distinct classes of cases of puerperal septicemia—(*a*) those in which we have from the beginning intense sepsis without much local trouble, and (*b*) those where we have a milder grade, so to speak, of the trouble with greater local manifestations in the uterine wall, the cellular tissue, or in the adnexa.

As to the treatment of these cases, I believe in the first class, where the septicemia is intense, with very little swelling of the uterus, a little tenderness with no pain, a rapid pulse, and possibly a high or even a low temperature, without evidence of peritonitis, the patients gradually decline and die from shock. They will die in spite of what you may do, whether you pack the uterine cavity or do anything else. In the other class of cases, where the patient has, for instance, shreds of membrane present that the physician supposed would come away but did not, where there are tufts of placenta adherent and breaking down, much can be done by instituting timely measures. I have seen cases in consultation where the attending physician has assured me that everything had come away, and yet I have put the patient on the table and with a blunt curette raked gently over the surface, brought away shreds of placenta, washed out the uterus, reducing the temperature very materially, and after forty-eight hours the patients made an uninterrupted recovery. In this class of cases the curette will be of benefit to the patient where simple irrigation would not.

As far as packing the uterus with gauze is concerned, I do not believe it is necessary to do so in the case of a puerperal septic uterus, because the os is wide open, soft, and flabby. The uterus is in a dilated, swollen condition. I have not seen such a case where it was necessary to pack or to insert gauze for drainage, because we always get good drainage. Out of at least forty cases of puerperal septicemia which I have seen in consultation in the last eight years, only two have died. Both have been cases of intense, rapid septicemia from the moment infection took place. Nothing could be found in the uterus and there were no localized symptoms. Out of a thousand or more cases in my own private

practice and in hospitals, I have not seen a case of puerperal septicemia in the last six years. I believe it is preventable.

Dr. James F. W. Ross, of Toronto.—I do not think it is necessary that we should curtail this discussion on account of time. We are here for the purpose of discussing papers, and, as I think this subject requires a great deal of discussion, I propose to give my views at length. The question of operation in cases of puerperal sepsis and after gonorrheal infection is one that takes up at least three-fourths of the range of our abdominal work on women. The two combined certainly consume that much of our time, and hence some of the arguments that obtain at an early period after labor may be equally useful at a later period. The discussion is of the greatest importance because we have now a new craze that has seized the profession, the removal of the uterus in cases in which it is often, in my opinion, not necessary to remove that organ. The pendulum has swung too far, as it did in the case of the removal of the ovaries for vague symptoms, and this Association should take some steps to swing it back again to its normal position.

Dr. McMurtry's classification is a valuable one, and one that we should keep before us constantly in our daily work. In his first class of cases we might call them almost non-operative—cases of phlebitis, of lymphangitis, cases of what we might call pyemia. We find them from their inception pyemic, and consequently incurable by surgical means. The second class is what we would simply call septicemic, and never become pyemic. I do not know whether we are assured of that or not; at any rate, these cases manifest a tendency to improve, and they are the ones that call for operation.

The question of hysterectomy in such cases is one that is not yet settled. I believe that there are certain cases in which it may perhaps be well to remove the uterus. To begin from the vagina and take out such a uterus without having an opportunity of examining its surface, and not doing as Dr. McMurtry did in his case, seems to be bad practice. I believe in all these cases an exploration should be made through the abdomen. We may find tubes and ovaries perfectly healthy, and an extraperitoneal abscess; or we may find pus-tubes with the uterus in a healthy condition, without any abscesses in it. In these latter cases the minor operation of removal of the pus-tubes will be sufficient to cure them, and the women will still have their uteri left behind.

The paper of Dr. Miller is a good one, but I cannot agree with all the sentiments expressed therein. I think packing and repacking the uterus is a dangerous practice. The use of the curette I also condemn. I believe that, in the words of Dr. McMurtry, nature's barriers are torn away by the curette, and you often find a rise of temperature follow-

ing its use, perhaps a severe chill. A single primary packing, however, is, in my opinion, of value. Dr. Potter thinks that packing of the uterus too tightly interferes with its contraction. Perhaps it does in some cases, but I can scarcely think that we can pack gauze tightly enough with a small pair of forceps to prevent it from contracting. I think the uterine wall is strong enough to contract on any gauze we may insert with forceps. No gauze will act as a drain longer than thirty to forty-eight hours.

Dr. Davis made a good point regarding vaginal drainage in some cases, and I believe if carried out in selected cases septicemia will be relieved for the time being, and an operation better tolerated at a later period. Such cases are rarely met with. I see a good many cases of puerperal septicemia, not in my own practice, because I do not practise obstetrics, but in that of others. I am frequently called to the country to see these cases in doctors' wives. I believe I have seen more cases of puerperal septicemia among doctors' wives than in any other class of patients. The doctor's wife is, unfortunately, the subject of meddlesome midwifery, or else of neglected midwifery—one of the two. He depends a good deal upon some brother practitioner near by, and he does not care to bother him until the last minute. When the time comes it is found that there has been an unrecognized serious complication. Perhaps the case requires turning, or there may be a fibroid tumor complicating the pregnancy. Perhaps no previous examination has been made, and as a consequence valuable time has been wasted. On the other hand, again, there is a tendency in some cases to do too much. Instruments are applied too early; ergot is given too early; chloroform is administered too long, and, as a consequence, labor has not an opportunity to pursue the normal course it otherwise would if attended by a stranger, not the husband. I see a good many of these cases, and I am satisfied that if the operation of hysterectomy was suggested to these gentlemen earlier in the course of the subsequent septic disease, they would shake their heads and consider the matter seriously and ask for further advice. That would happen in many of these cases. A case will sometimes progress and the operation be required at a subsequent date, but I have not yet seen a case in which I considered it necessary to remove the uterus for the relief of puerperal sepsis.

Dr. Sherwood Dunn, of Los Angeles.—I rise with considerable diffidence to discuss this subject in such distinguished company, and you will understand the reasons when I tell you that it is the first time I have attempted to make remarks on medical topics in English for ten years. For the past ten years my associations, work, and society affiliations have been totally French. I have seen very little English liter-

ature, and I must confess to you that I am completely ignorant of English technicology as related to medicine, and more particularly of the branch and specialty that occupies the attention of this distinguished Association.

The subject before us cannot be magnified in its interest to the medical profession and to surgeons, as has been said by Dr. Ross; it in combination with blennorrhagia probably furnishes three-fourths of all the cases that come before us for consideration; and I certainly agree with him in his remarks that the discussion of this subject in its various aspects could not be prolonged beyond a period that would lend most intense interest to every gynecologist. I do not, for one moment, permit myself the liberty of criticising the papers that have been presented; but I wish to say to you, in relation to the work I have been engaged in, some things that will certainly have a weight and relative interest to the subject under discussion.

In the Broca Hospital, Paris, we have 184 beds, 48 of which are devoted to obstetrics. In my three years' connection with the hospital service there, I will say that no case of confinement has ever been followd by a septic condition. We also receive into the service very frequently women who, shortly after parturition, come to us with a high temperature, rapid pulse, and all those evidences of improper care which are a disgrace to the medical profession; for with our knowledge of asepsis and antiseptic conditions, as they pertain to the practice of our profession at the present moment, that a woman in childbirth should have puerperal fever following her confinement, is a disgrace to the man that cared for her and the assistants he employed at that period. I would like to say that in the cases of those women who come to us, it is a fixed rule that the moment they enter our service, and we have discovered the fact that they are free from accidents consequent upon parturition, they are immediately prepared, placed upon the table and curetted, not with a sharp-cutting curette, but with a large, soft-edged one that explores the uterine cavity, that tells us instantly as to whether there is septic material left there or not, and never have I seen any evil results following that procedure. If it does no good, it does no harm, and in many cases where there have been hour-glass contractions, or where there has been contraction of the os with a relaxed and flaccid condition of the body, the moment the uterus is dilated and you enter its cavity, you there find a varying quantity of septic material, which is the prime cause of the poisoning of the woman's general system.

It is also a fixed and cardinal principle with us never to pack a uterus excepting for hemorrhage. After curetting the uterus and carefully washing it out with the permanganate of potassium solutions, a

loose drain is inserted in its cavity, and that operation is repeated twice a day, morning and evening. Now, it goes without saying, that in many of these cases the procedures first adopted have proved useless because the women arrive in the hospital service with their death certificates practically already signed. But I believe that my distinguished master and friend, Professor Pozzi, was the first one to advocate curettement of the uterus shortly after parturition for septic conditions, and I wish to emphasize what I have said in regard to curetting the uterus after parturition—namely, that I have never seen it do any harm when practised in the manner described.

Dr. Edmund F. Fish, of Milwaukee.—In regard to the curette I wish to say a few words. Dr. Miller in his paper recommends its use, but does not say whether it is a dull or sharp one. Only three other Fellows have suggested which kind to use. Dr. Davis suggests the use of a dull curette, and one of the other Fellows a sharp one. Now, in cases of uterine traumatism, especially in abortions where there are retained septic tampons within the uterus, it is absolutely impossible to curette this material away with a dull instrument. You would not think of using a dull curette, in my opinion, any more than you would suggest to a barber the use of a dull razor to shave you. We all know in cases of retained secundines, retained pieces of afterbirth, how difficult it is to scrape them away with the finger. I have seen a dull curette used for seemingly half an hour, and two days afterward a piece of afterbirth the size of a hen's egg has passed away. We have to use in these cases more force with a dull instrument, while with a sharp one we can curette everything easily. With your finger you can tell from time to time whether there is retained placenta in the uterus.

As to drainage, if we have a large, flabby uterus which refuses to involute, I believe then that thorough packing of the organ will cause contraction of it. If, however, the uterus is doing its work well, then drainage by sterilized gauze is as good as anything. Before curetting I use a bichloride of mercury solution to wash out the uterus, then curette it with a sharp curette, then irrigate the uterus, sterilize the vagina, and place a light packing in the vagina of sterilized or iodoform gauze. After pursuing this treatment for a reasonable time, four or five days, or possibly a week, if the disease progresses, there is probably a lymphangitis, pus-foci, or inflammatory exudates within the folds of the broad ligament. I have within the last six months operated several times for this condition by the vagina and drained, finding pus-foci and inflammatory exudates. Yesterday I did the same operation, but have not heard from the patient. The other patients recovered.

Dr. A. H. Cordier, of Kansas City, Mo.—I desire to emphasize the position taken by Dr. McMurtry, that in nearly every instance every case of puerperal sepsis is an individual one, and should be treated as such; that we cannot lay down fixed rules how to treat puerperal sepsis, but we must make a diagnosis and classify the cases and treat them according to the classification or type to which they belong. We must classify them (1) as those cases that follow immediately after labor, and (2) those that follow several days succeeding the confinement. We must recognize the difference between sapremia and true septicemia.

Those cases immediately following confinement that are relieved and cured by the use of the curette, like Dr. Macdonald's case, are true sapremic cases, due to the absorption of putrid material within the cavity of the uterus, and are not attributable to invasion with pathogenic organisms. If Dr. Macdonald had not been thorough in his asepsis and his method of treating the case; if he had introduced streptococci and produced secondary infection there, instead of his patient getting well, she would have died, or at least would have developed the condition of the other patients he speaks of in which germs entered the blood, as well as ptomaïnes, multiplying there; an abdominal hysterectomy with removal of the appendages will do no good in these cases. If the curette is used at all, it should be used early and thoroughly, and then let the uterus alone. The uterus should be packed gently. Dr. McMurtry has been misunderstood by some of the members in speaking of gauze drainage. He does not pack the uterus in the sense that he would stop a hemorrhage, but simply introduces gauze enough to get capillary drainage, and that obtains where the gauze is properly used. If, after thorough curettement, you should again curette the uterus in a day or two and keep it up, you will disturb the granulations—nature's breastwork, so to speak, which is thrown out to resist the invasion of septic material. Let it alone.

The Association in this discussion has lost sight of one of the most frequent sources of absorption in puerperal women—namely, the vagina. On account of the tears, the traumatism that occurs during the passage of the child's head and the use of instruments to assist delivery, the vagina is the startingpoint for septic absorption, and not the uterus in many instances, and to remove this organ would be folly. It would not be good surgery. While we should look upon every case as an individual one, we should not rely upon the symptoms alone, but upon the physical examination of the pelvic organs of the woman. If you encounter a case with a large, flabby, swollen uterus, indicating that it is filled with pus-cavities either in the walls of the uterus or surrounding it, then the thing to do is to remove the uterus. On the other

hand, should you meet with a case where the trouble is posterior to the organ, and the patient is not in a condition to stand an anesthetic or prolonged operative procedure, you make an opening through the vaginal vault and break up the different pockets of pus, evacuating them through the vagina with the expectation of saving her life and doing a more radical operation at some time in the future. The surgery must be done early if we expect to save our patients. We should not let them go until they are saturated with ptomaïnes or bacterial products, but resort to early operative interference.

Dr. G. E. Krieger, of Chicago (by invitation).—I am a firm believer in asepsis, and when it is properly carried out in connection with cases of confinement, the more chances the woman will have to recover. I need not say to you that we are resorting to a method of treatment at the present time which is full of promise, and which a little while ago we had no knowledge of, and I think some time in the future we may be able to apply similar treatment in cases of puerperal sepsis. You have all doubtless heard or read of the experiments that have been made in Paris in which women suffering from puerperal sepsis were inoculated with serum from horses which were formerly tainted with streptococci, and on the third and fourth days thereafter the temperature was materially reduced, and the women were saved. I desire to announce to the Association that similar experiments are at present being carried out in Chicago, where I have four horses, some of them being treated with streptococci toxin and serum, and which agents will be offered to the medical profession to be used in cases where other means fail. I think in time we will come to use serum or something else in cases of puerperal septicemia, the same as we now use serum for diphtheria.

Dr. J. Henry Carstens, of Detroit.—The whole point seems to rest upon the kind of infection. In those cases where membranes or pieces of placenta are left in the uterus and the curette is used, they must be entirely different from those where there are no local evidences of disease, where we find the patient with a high temperature, a rapid pulse, and gradually drawing near to death's door. If you question these patients, they will tell you they have practially no symptoms. So there must be a microbe entirely different from the other kind we get from retention of membranes. There is one point that forcibly impressed me, brought out by one of the speakers—namely, that a woman who has puerperal fever has simply had a poor obstetrician to attend her. I do not think that is a good theory. I believe in auto-infection. I believe a woman can be dirty and the obstetrician perfectly clean. I believe also that there are cases where a woman cannot be cleaned by the

obstetrician, because he has not the time to do it, and the environments are such that it is very difficult, if not impossible, to render the parts thoroughly aseptic. Where a woman has gonorrheal or puerperal pus-tubes of long standing which rupture during the process of labor, it is a case of auto-infection. The obstetrician has nothing to do with it. Because a woman has puerperal fever, there may be a feeling among the laity that it is sufficient ground for a suit for damages. I believe the physician is at fault in some cases. I have no doubt about that, but I think there are a great many cases where he is not, and consequently we want a loophole for the profession.

With reference to the curette, a sharp one is not necessary for removing shreds of placenta in the uterine cavity. Fatty degeneration takes place in the part that is left in forty-eight hours, and it is easily separated from the uterus, and a blunt curette will take it away. By using a blunt curette you do not scrape out healthy tissue, you do not open the lymph-channels and bloodvessels, consequently you leave very little chance for infection.

I do not believe in gauze drainage, and it seems to me Dr. Miller convicts himself with his own words, when he says the temperature rises in twenty-four hours after the gauze is inserted, and that every time he takes it out the temperature goes down. Why does he not take the gauze out and leave it out, and put in silver wire, as Dr. Longyear says, if anything is necessary to keep the uterus open? The best way is to introduce a speculum, pull the uterus down, swab it out carefully with strong carbolic acid. That is all you need to do in ordinary cases.

The other class of cases referred to are really beyond our reach, and I do not think anything will help them. I have seen three cases of puerperal infection where the women were apparently perfectly well, in that we could not find any local symptoms in the pelvis, although the temperature in these cases varied from 105° to 106.7°. These women were all physicians' wives. They all got well, were not unsexed, and some of them are comparatively young and the mothers of several children. I admit that there are cases in which we must operate, but in a large proportion of them we should trust to the *vis medicatrix naturæ*.

Dr. Frederick Blume, of Pittsburgh.—There is one point which I wish to mention, and it is this: How does infection occur in cases of retained placenta? According to Winter, of Berlin, micro-organisms are normally found in the sexual organs of healthy women. Some years ago he proved that in at least 50 per cent. of the cases the cervical canal contained many germs, among them bacilli and cocci; their number considerably increases during pregnancy. The vagina of healthy women is invariably the seat of micro-organisms. They are

in a condition of lessened virulence and therefore generally harmless, but they may, under certain circumstances, regain their virulence and then lead to sepsis. Furthermore, it has been shown that the customary irrigation of the vagina, even with a strong antiseptic solution, does not destroy the microbes. To render the vagina aseptic it is necessary with the aid of two fingers to wash it thoroughly. The fact that parts of the placenta and shreds of the membrane may remain in the uterine cavity for days or even weeks without causing any harm, but that they become decomposed and give rise to infection when hanging in the cervix or in the vagina, finds an explanation by the investigations of Winter.

With regard to curetting the uterus, I wish to say that those cases in which auto-infection takes place from small retained particles of placenta do not develop fever in the first day, as stated by one of the gentlemen, but they are taken sick generally between the third and fourth day. In such instances, if we introduce the finger and find small shreds of membranes, the uterus should certainly be curetted with a sharp instrument, because we cannot remove the débris with a dull one. I have curetted the uterus, after a dull curette had been used, and have removed many shreds which were in a condition of fatty degeneration. The standpoint taken by Drs. McMurtry and Macdonald is the one which must be sustained in the light of our present knowledge.

Dr. Miller (closing the discussion on his part).—If time permitted, I would answer all of the points that have been brought out at some length. With reference to the criticism of our worthy President (Dr. Carstens) in regard to packing the uterus with gauze, that is one of the things I would impress upon your minds, eliminating it from other things. Packing has proved injurious in the past, according to Dr. Price, and I believe Dr. Carstens holds the same view; and if he had given the paper a little closer attention, there would be no ground for criticism in this respect. I advocated packing of the uterus as a means of drainage. We know that in packing the uterus after curettement there is an accumulation following it, and if the packing is left for some little time, on removing it drainage takes place, and these cases occur from infection. My paper dealt largely with the subject from a bacteriological standpoint. I maintained that the birth-canal could be kept dry by absorbent dressings, which removed the culture-media and arrested the development of germs and infection until the abraded parts had been repaired. With irrigation we have come to use dry dressings entirely. We have not decided by the discussion which has taken place today the cause of puerperal sepsis. Several of the Fellows have reported cases of puerperal sepsis which they have seen mostly in consul-

tation with other physicians. These cases occur but rarely in the hands of distinguished obstetricians, but in the practice of general practitioners who are engaged in treating all kinds of cases. In the case which I cited, the sepsis occurred in the experience of a practitioner who originally had attended a case of erysipelas. He did not go directly to this case, but contaminated another patient; that is, after taking the precautions known to the profession at the present day, cleansing his hands with germicides, etc., he contaminated this case. He gave up the case to another practitioner who treated it. These cases develop sometimes on the third or fourth day, as has been referred to by one of the speakers. The case I reported originated previous to that. There is some infection carried in these cases by some means with which as yet we are unfamiliar. Experiences have been related by the different members, and according to some of them their cases have recovered. We find in the recent teachings of bacteriologists that the lochia or vaginal secretions are germicidal in their action. I myself have had bacteriologists make examinations of at least fifty specimens in which we expected to find the gonococcus or some other cocci, but failed to find them present. In the cases which I have cited the secretions were submitted to a bacteriologist, and proved to be true cultures of the streptococcus such as we find arising from erysipelas.

In regard to packing the uterus, my thought was simply to keep the parts dry and change the packing sufficiently often, and in doing this the temperature would immediately go down upon packing without irrigation.

Dr. McMurtry (closing the discussion).—The discussion of the two papers has taken a wide range, and there is one particular feature of the subject that it seems to me proper to bring before such an Association as this, and which has been lost sight of. There are gentlemen in this room who attended the meeting of the Section on Obstetrics and Diseases of Women at the American Medical Association this year, who may recall the discussion upon the relation of hysterectomy to puerperal sepsis. There were gentlemen of national fame in gynecology who took part in the discussion, advocating the performance of the operation of hysterectomy upon the indications of elevation of temperature and increased pulse-rate. We are aware that there is a hysterectomy-wave passing over this country at the present time, which has prevailed with very great fury during the last year, and it occurred to me at this time it might be appropriate to consider especially the operative treatment of puerperal sepsis, and it was especially the purpose of my paper to inveigh against a resort to operative procedures in puerperal septic inflammatory conditions upon any other basis than we

would resort to operation in inflammatory conditions of the pelvic organs. So I fear that that particular point, which I wish to bring before you for special consideration, has been relegated to the rear. In so far as it has been touched upon, I am happy to see that the Fellows indorse the view that I have taken in that respect. I have noted two or three remarks made in the early part of the debate to reply to, but they have already been answered by previous speakers.

I thought when Dr. Manton spoke that I had made a very bad mistake, and I knew gunshot-wounds were more common in Kentucky than in other portions of the country, especially in Michigan; but I did not think there was an excessive prevalence of puerperal sepsis in that vicinity, and I was a little nonplussed when Dr. Manton made his remarks. But later Dr. Ross stated that puerperal sepsis, with perhaps the addition of gonorrhea, comprised three-fourths of all the work that goes to specialists in diseases of women. That view was reiterated and confirmed by our friend and colleague, Dr. Dunn, in his interesting remarks, and almost every gentleman who has spoken has reported cases of puerperal sepsis which he has either seen in his own practice or in consultation with other practitioners. And so it seems to me that we have not yet exterminated it. I think it will occupy our attention for some time to come in its various forms. If I am permitted to make a digression, I would emphasize what my accomplished friend, Dr. Ross, has said in this connection. You may take the records of maternity hospitals, either in Europe or in this country, and you find an ideal state of practice because the institutions are under the control of physicians who carry out systematic and exact methods of asepsis. In these institutions military discipline is carried out. Take the Sloan Maternity in New York, and the Preston Retreat in Philadelphia, and the hospitals conducted in Germantown, you may find a long series—perhaps hundreds of women taken from the poorer classes—who do not cultivate in their daily mode of life cleanliness of habits; they are subjected to a systematic method of asepsis in midwifery, and you will find that puerperal sepsis is unknown practically; and yet Dr. Frederick, who is connected with a hospital and does obstetrical work, and Dr. Ross, who sees a great deal of midwifery-work in consultation, and others, have told us that the nastiest midwifery done in this country is done in elegant homes and among the best people. I know from my own experience in the Southwest that you cannot go to a hamlet or village anywhere in consultation with a physician but what, before you leave the town, in nine instances out of twelve, you will hear of some lovely young woman that has been married about a year and a half, who recently died of puerperal sepsis and somebody is taking care of

the baby. In the cities the laity are getting to be informed, although physicians do not report very commonly deaths from puerperal sepsis. They are put down as having died of malaria and other conditions. It is a common affair, and I believe the practice of midwifery should be revised by the profession. It is getting to be that nobody wants anything to do with obstetrics. It is looked upon as being of very little importance, and the brilliant results of surgery have so attracted the profession in its various departments, especially as relates to women, that obstetrics has been relegated to a back seat, and it is that part of our professional work that I believe needs revision. That is the digression, Mr. President.

Let me now say a word or two in regard to the curette. This Association of specialists should enter a firm protest against the indiscriminate routine use of the curette. Of course, the curette is a valuable instrument, it is a valuable method of practice; but I wish to insist that the curette ought first to be used always as an exploratory step. If anyone here thinks no harm can be done with a blunt or sharp curette, I trust they will leave that impression forever. It is capable of doing an immense amount of mischief. It is an instrument that is fashionable and the general practitioner is aware of it. You will find that all the cases of gynecic surgery which we are called upon to treat and have previously been in the hands of the general practitioner, have been curetted before they reach our offices. I venture to say that there is not a gentleman who is engaged in special practice but what eight out of twelve cases that come to him with inflammatory disease of the pelvic organs have been curetted before they reach him. It is an operation which is easily performed; the uterus is accessible, and the curette is a valuable instrument in these inflammatory conditions. Curettement is done when it ought not to be. The operator can push a curette very easily through the uterus into the abdominal cavity, and this is an accident not confined entirely to unskilled hands. There are certain conditions of the uterus in which it is easy to push a curette through, more especially where the tissues of the uterus are boggy, soft, and edematous. In the second place, the curette, if there is anything to be removed by it, scrapes away the mucous membrane of the uterus; it opens the mouths of sinuses, of veins and lymphatics; nature's barriers thrown out in the form of organized blood-clots are torn away by it, and new avenues are opened up for the dissemination of septic material. I have seen a case in the last year in which a physician used the curette systematically in a case of puerperal sepsis, shortly after which the woman had rigors, followed a short time thereafter with high temperature, high pulse, and a heavy sweat.

In regard to the puerperal state, the finger is a most excellent exploring instrument, and if it is passed into the uterus and things are found that ought to come away, it makes no material difference what you do it with, whether with a Simon's spoon or a gouge, if used properly, and the same may be said of a sharp or blunt curette. But first, before using the curette at all, it ought to be determined with the finger whether there is anything in the cavity that needs to be brought away. I protest against the indiscriminate routine use of a blind general plan of treating certain cases in a general way.

In regard to the use of gauze, I find that we are liable to misunderstand one another upon that point, and what I meant by the use of gauze was, that it is not a good plan, in my judgment, to plug up the cavity the same as you would do it to prevent hemorrhage. You simply put in one or two strips to drain the cavity, and that is as much as can be accomplished by it. The gauze is or ought to be applied loosely.

EXCEPTIONAL LOCATION OF THE BLOOD-CLOT IN A CASE OF RUPTURED ECTOPIC PREGNANCY.

By MARCUS ROSENWASSER, M.D.,
CLEVELAND.

Operating for free hemorrhage after tubal rupture we find a mass of coagulated blood in the true and false pelvis, and a mixture of fluid blood and clots distending the abdominal cavity. Operating for circumscribed hemorrhage we find the blood-mass gathered in the pelvis or even extending high into the abdomen, but limited or shut in by lymph-agglutinated viscera or by the separated folds of the broad ligament. The ultimate recovery of the patient whose history is to follow leaves as a matter of conjecture the causes that prevented the blood from gravitating into the plevis, but led to its accumulation in the side of the abdominal cavity from iliac fossa to posterior diaphragm. The extreme reluctance with which the record of this case is presented at this time is overcome by reason of my inability to find a parallel in the literature at my disposal, and because of the hope that the knowledge of such possibility may prevent future confusion of an otherwise clear diagnosis. Drs. J. H. Lowman, C. B. Parker, and A. P. Ohlmacher assisted at various periods in sharing the responsibilities of the case.

Mrs. R., aged thirty-seven years; married seventeen years; four children; regular since birth of last child five years ago. Excepting a mild attack of typhoid fever four years ago, she has enjoyed excellent health. The last regular menstruation was on September 6, 1894. The next period was missed, but a "flow" began October 11th, and continued almost daily during the following five weeks. The discharge was at times quite free, sometimes offensive, but not attended by pain, except an occasional sharp twinge attributed to the right ovary. There was much nausea, and unusually severe vomiting. The uterus was slightly enlarged, cervix soft,

patulous, easily dilatable. A rise of temperature on two previous days led to a curetting on November 16th, under the supposition that remnants of an early abortion required removal. This was done under chloroform. The uterus was four inches deep, the walls were soft and of a bluish hue. The curette brought away neither shreds nor granulation-tissue. Suspecting an ectopic pregnancy, a careful pelvic examination was made, but, perhaps owing to the very thick abdominal wall or exceptionally misplaced tube, no tumor was found. It was supposed, therefore, that the ovum and its envelope had been overlooked in the discharges that had preceded the operative interference.

The curetting was followed by a mild pelvic peritonitis. The temperature rose to 101° ; there was a tenderness at the fundus, also pain in the rectum, even upon the passage of gas. At 2 P.M., November 21st, the temperature was only 99°, but there was an uncomfortable sensation in the lower bowel, for the relief of which mineral water had been given. This was not retained. While retching the patient was suddenly seized with an agonizing pain in the abdomen, feeling as though she must die. Collapse rapidly followed—face drawn, eyes sunken, marked pallor, profuse sweat, cold surface and extremities, pulse almost imperceptible ; she gradually rallied from the shock. The next morning the pulse was 100 ; temperature 100.5°. A tender and somewhat indefinite mass was to be felt in the abdomen to the right of the median line from the iliac fossa below to the hypochondrium above. The tenderness on the left was comparatively slight. Abdominal distention moderate. It was deemed best under the circumstances to postpone a pelvic examination until the following morning, November 23d. The uterus was movable, enlarged, tender, in its normal position. Beginning at the right cornu and extending upward toward the iliac fossa was the ill-defined lower part of the mass which filled the right flank, losing itself under the border of the liver. There was no bulging, thickening, or resistance in the recto-vaginal pouch, and none at the base of the broad ligament ; nor did the rectal touch reveal any contraction in the lumen of the bowel.

The unusual absence of a circumscribed pelvic tumor, the development of an inflammatory mass in the side of the abdomen, and the fact that a mild peritonitis had preceded the collapse, cast a doubt over the *à priori* conclusion that the collapse had been caused

by rupture of a tubal pregnancy. Neither in my own experience nor in my reading was the pelvic tumor ever missing when the blood-mass had become circumscribed. Assuming that a miscarriage had taken place, could not the collapse have had its origin in the rupture of some recent intestinal adhesions, inasmuch as a mild peritonitis was just subsiding and the collapse took place during a spell of retching and vomiting? Subsequent events furnish a most instructive and positive answer to this query.

As a result of the side-tracking of the diagnosis, surgical treatment was temporarily discarded and the case was treated as a localized peritonitis. The latter continued during the next two weeks without causing alarm. The pulse ranged from 96 to 108, and the temperature from 100.5° to 102°. A right pleuro-pneumonia now rapidly developed, beginning at the base and ascending to the apex. The infection had evidently entered by way of the diaphragm. For the next two weeks the pneumonia was the prominent feature on the bulletin-board, with the peritonitis and its supposed exudate crowded into the background. Meanwhile the patient suffered intensely from a sharp, gnawing pain through the lower part of the right thorax and the entire right hypochondrium and loin. While the pneumonia was subsiding the pain continued, and was supplemented by daily recurrence of distinct chills and profuse sweats. She had had five chills, with pulse ranging from 116 to 128, when finally an indistinct deep fluctuation was detected in the abdominal mass. This was thirty-one days from the date of collapse. An aspirator, introduced at the level of the umbilicus on a line from the crest of the ilium to the lower ribs, brought away a fetid, fleshwater-like fluid containing colon-bacilli and pus. A free incision through two and one-half inches of abdominal wall followed aspiration and gave vent to about three pints of most offensive decomposed blood and blood-clots. No fetal remnants were found despite careful search. The abscess-cavity extended from the iliac fossa upward and backward under the liver and well toward the spinal column. It was drained by rubber tubes introduced in both directions. Convalescence was retarded and complicated by a fecal fistula which made its presence known about ten days after opening of the abscess, but fortunately closed within a month.

During the first three months after recovery the patient suffered considerable pain in the left side one week previous to menstruation.

Within the last three months this pain has not recurred. The uterus is freely movable, in normal position ; there is no palpable trace of previous disease. She has regained her normal weight and can run up and down stairs as well as she was wont to in days before. Her recovery is complete.

DISCUSSION.

Dr. H. W. Longyear, of Detroit.—Mr. President: A paper upon the subject of ectopic pregnancy should certainly be discussed in some way. I think the number of cases of mistaken diagnosis are numerous, but not so much so where the cases are attended by specialists like Dr. Rosenwasser and others. Mistakes of diagnosis among general practitioners are quite common and lead to those cases with which we come in contact, where operations are made in the latest stages and when the patients are almost at death's door and the chances are almost all against her recovery. I had such a case a short time ago, where a woman was bleeding for several months. I operated, and I think I would have saved her life were it not for one complication. The whole abdomen was filled with blood and clots of all ages; some of the clots, being partly organized and mixed up with and adherent to the omentum, gave me the greatest trouble in their removal. The time occupied in removing the blood-clots in this case was necessarily great, and still when I stopped I left some in the abdomen. The pregnant tube, the cause of the trouble, was removed in a very few minutes. The patient died of shock some three or four hours after the operation, and I could not help but believe in that case that if I had simply sponged out the blood and closed up the abdomen, leaving the troublesome clots, the patient might have recovered. The time elapsing was sufficient to exhaust and overbalance her vitality. The question I would like to have discussed in regard to these blood-clots is whether it is necessary to remove them in cases where they are apparently entirely aseptic; whether it would do any harm to sew up the abdomen and leave the blood-clots to be absorbed, or put in drainage.

Dr. James F. W. Ross, of Toronto.—I would like to say a few words on this interesting subject. Two years ago I reported to the Michigan State Medical Society a case of acute general peritonitis, produced by the rupture of a suppurating clot. The clot followed an ectopic gestation. The uterus was in the median line, and the clot was found in front of the broad ligament lying in that neighborhood, and

was not in the least connected with the tube. There was no evidence of ectopic gestation at the time of the rupture. The gestation-sac had ruptured several weeks before and the patient had recovered from the rupture. The tube had regained its condition, and the clot was left in the position referred to. The clot was simply lifted out of the abdominal cavity and a spot could be seen at which it was perforated. The patient was lying under my care in the General Hospital at the time. She had been under the observation of her physician for some weeks before I saw her, and he could not come to a conclusion as to the nature of the trouble, but we had her removed to the hospital for the purpose of observing her condition. At two o'clock in the morning she was taken with pain in the abdomen. The house-surgeon saw her and summoned me. I went to see her and found the temperature had risen to 103°, the pulse also began to rise, and I came to the conclusion that something inside had ruptured. A mass could be felt, and I thought it was a ruptured pus-tube. I opened the abdomen and found it was an old clot left by the ectopic gestation that had begun to suppurate in the centre. It became organized, but the vital processes were not sufficient to penetrate the interior of the clot, and hence the centre broke down, just as we know the centre of a clot will break down.

In another case I found a clot up in the neighborhood of the lower end of the spleen, and the ectopic gestation-sac contained a fetus, which was shelled out from among the intestines at the time of the operation.

I have another interesting case in connection with this subject of ectopic gestation which will appear in the next number of the *American Journal of Obstetrics and Diseases of Women*—namely, early and complete separation of the tube containing an ectopic gestation, with a water-color drawing of the specimen. In this case the woman was standing at the door about seven o'clock in the morning and was suddenly seized with pain in the abdomen. Her husband was away at the time, and she fell fainting in a chair. When he got home he found her in this condition. She had had an absolutely normal menstruation, and no symptoms of pregnancy were to be found. She was regular with her monthly sickness three weeks before I saw her. Her doctor was called and got there about two o'clock in the afternoon and found her cold almost to the elbows, with the abdomen distended with fluid. At twelve o'clock I received a telephone message to come in consultation with him and his partner. I came to the conclusion that perhaps the woman had a ruptured bladder, as she had given a history of not passing water since early morning. I passed a catheter into the bladder and obtained very little urine. I suppose the large quantity

of blood poured into the abdominal cavity had suppressed the urine. The patient was removed to the General Hospital about twelve o'clock, and at two o'clock in the morning I went there myself and made arrangements to operate. I came to the conclusion then that she was too much shocked to do anything. At nine o'clock in the morning one of my *confrères* saw her in consultation, and it was decided that the administration of an anesthetic would likely prove immediately fatal. I therefore made up my mind to satisfy myself as to whether this was a case of ruptured bladder or ruptured ureter, or a case of ruptured ectopic gestation. Under the local anesthetic influence of ethyl chloride, I made an opening in the median line, found the abdomen filled with blood, passed my finger down and inserted a drainage-tube. The patient was so collapsed and pained that I could not draw up the tube to put on a ligature. We expected that each breath would be her last. The patient presented the appearance of one of those cases of severe bleeding such as we sometimes encounter. She was put to bed and the pulse gradually went down to 112. I then (forty-eight hours afterward) administered chloroform and operated, finding this condition: the tube was completely severed from the cornu of the uterus by the rupture of the smallest ectopic gestation-sac I have ever seen, and from this the hemorrhage had taken place. The tube was ligated and the hemorrhage stopped, but again the patient became so collapsed that I could not wash out the blood. To have done so would have killed her. After the administration of the chloroform began she acted badly; peritonitis set in, and she succumbed. I am sorry we had to leave the clots. Such clots will undoubtedly set up peritonitis.

Dr. Edwin Ricketts, of Cincinnati.—The case reported by Dr. Rosenwasser and the one by Dr. Ross should impress us as to the importance of the earliest possible diagnosis in these cases. It is quite rare that some operators, at least, present their failures in diagnosis, and for that reason I think we are indebted to the essayist for the presentation of this case. Now, the question comes up, How can we get at these cases early? Was there any way in which Dr. Rosenwasser could have made the diagnosis in the case he has reported? Personally, I would say this, that if in these cases we wait to find a lump through the abdominal wall, many times we will be misled; in other words, we should take the subjective symptoms into consideration. The fact that a woman standing at the door, about her work, is taken with a severe pain in the lower part of the abdomen, falls to the floor, and is found in that condition by her husband, that of itself is enough to justify us to open the abdomen and see what is the matter,

even though we may not find a mass by bimanual examination without chloroform or with it. Four weeks ago, a patient, twenty-four years of age, consulted me, in whom there was nothing found but a fixed uterus. She had suffered from pain for four or five weeks to such an extent that a half-grain of morphine had been administered hypodermically, morning and evening and at intervening intervals. There was no history to lead us to suspect we had extrauterine pregnancy to deal with, for the reason the patient was single, but that was the condition found.

As to the case reported by Dr. Ross, would it not have been better to wait even longer before he opened the abdomen, with the condition present, the tube torn off well up toward the fundus from the ectopic gestation, and the patient in a collapsed condition? I question seriously if we should open the abdomen and let the blood out and apply a clamp. Under the circumstances the patient stands a better chance if let alone, and then in a week, two weeks, or six weeks we can consider the advisability of operating.

Dr. W. E. B. Davis, of Birmingham, Ala.—In connection with Dr. Rosenwasser's case, I desire to speak of one which I referred to at the Toronto meeting of the Association last year. It was a fatal case; the wife of a physician, who was delivered at full term of a uterine pregnancy. Following this a mass was discovered in the right lumbar region, which continued to grow larger. The patient had the appearance of a person losing blood. The operation revealed in this case an ectopic gestation. The tubal pregnancy, which had perhaps taken place before the uterine pregnancy, had remained in a quiescent state until the time of delivery, when from traumatism it began to cause hemorrhage. The bleeding was easily controlled by gauze-packing, but the patient died from shock due to the loss of blood. The tumor was rapidly enlarging.

I will refer to another case treated in an unusual way, in which I drained the ectopic gestation-sac, not knowing what I had, through the vagina. It was a little more than three weeks ago. Patient left hospital the day before I came away to attend this meeting. I opened behind the uterus and packed the tube and sac with gauze.

Dr. Rufus B. Hall, of Cincinnati.—I am prompted to make a few remarks, especially after hearing the interesting report of Dr. Rosenwasser. His case was one that was likely to make him postpone the operation just as long as it was possible to do so; yet this case emphasizes a fact which we all know, that our aftersight is better than our foresight sometimes; in other words, the case emphasizes the necessity of early exploration in all instances of obscure abdominal disease.

With this clinical history, although obscure, and even though the patient has made a nice recovery, we can ask ourselves the question that comes to us as physicians, Did we give the patient the best chance for her life? Taking one case with another, is it the treatment to recommend, or is it the advice to give in the management of these cases? I believe that in this particular case the enlargement commenced a week or ten days after the beginning of her illness, and the tumor could be well defined. With this clinical history before the doctor he would have been justified in making an exploration; then the case would have been perfectly clear, and the patient would have been saved the possibility of death from sepsis. While she recovered, we can easily see that she had a close call for her life. I cannot speak authoritatively upon this question like some of my hearers, but I have had some experience in dealing with ectopic pregnancy and delayed operations therefor. I had occasion quite recently to go over my operative list of cases, and I find I have made fifteen operations for ectopic pregnancy with blood-clots of from three weeks to four months old at the time of the operation. In looking back over this list of cases I am impressed more and more with the necessity of early operation in every case. All of these cases, when operated upon, suffered either from septic infection, from contamination of blood-clot probably from the bowel, or had renewed hemorrhage with collapse when the operation was made. In one case that I remember particularly the diagnosis was not clear to the family physician. The patient for a period of eight weeks suffered ten or twelve attacks of colic-like pain, and never suffered from collapse to the extent of having cold hands or feet, but she would go to bed and remain there for a day or two. The abdomen was enlarging, there was a tumor in it the size of an adult head, and the day she came under my observation she went from her flat, which is two stories high, down the stairs, walked three blocks, climbed a long stairway to a dentist's office, had a tooth extracted, went home, and was preparing the noon meal when she was attacked with pain in the abdomen, and at that time she had collapse. I saw her and sent her at once to the hospital, and under ether operated. I removed a fetus about ten inches long. There were four or five pints of blood-clot in the pelvis, of various shades of color, showing plainly that hemorrhage had taken place at different periods, and a pint or two of recent blood were found in her abdomen. The patient died from loss of blood preceding the operation. The point I want to make is this: when that woman had something lying in her abdomen, and when it was known she was having attacks of pain, an exploration would have made an accurate diagnosis, and washing out the blood-

clot when the woman was able to stand the shock of the operation would have saved her life. I would emphasize exploration if the diagnosis is not clear, and in cases of ruptured tubal pregnancy operate early, before the patient is exsanguinated. The question of operating while the patient is in profound collapse is one to be determined always by the operator with the particular case before him.

Dr. Ross.—In reply to Dr. Ricketts's criticism, I do not think it would be well to let the matter go on record just exactly as he states it. If Dr. Ricketts had a case which represented the symptoms that my case did of ruptured bladder or of ruptured bloodvessel in the abdomen, I am sure he would have done just exactly as I did—make a diagnosis by means of the knife, with an incision large enough to admit the finger. As for applying a clamp to the bleeding vessel, it was not deemed expedient to do so, for the reason that we thought the patient was dead two or three times while on the table. I could not tell where the bleeding was coming from. The tube was not larger than a normal one (see plate accompanying original article, *Amer. Journ. of Obstetrics*, October, 1895, p. 567), and I did not make a diagnosis of ectopic gestation until the second operation. As previously stated, a drainage-tube was inserted, but the patient was so collapsed that we did not ligate the bleeding vessel.

Dr. Ricketts.—Whenever the abdomen is opened and there is blood in it, there is a source for the blood somewhere. The criticism I make is this: I am surprised that the doctor did not suspect then and there that he had a ruptured tube, and did not go directly in with his middle and index fingers and find the tube to see whether it was torn off.

Dr. Ross.—I did that.

Dr. Ricketts.—Then, if you found that condition, you should have applied a clamp until you had completed the operation.

Dr. Ross.—I felt the tube and it seemed rough.

Dr. Thomas J. Maxwell, of Keokuk.—I have listened with interest to the discussion on this subject. These are very distressing cases to deal with, and it is a difficult matter to know exactly what to do when we encounter them. There are other elements besides the scientific question as to what we ought to do—namely, to look after our own reputations. We may be blamed for a patient's death when we are doing everything possible to save her. Therefore, we have to take into consideration the ignorance of the people, although I do not believe we should let that thought swerve us from duty.

There is one point that has not been mentioned by any of the preceding speakers, and that is, transfusion with the common salt-solution to tide over these severe cases of hemorrhage. There is nothing else

but hemorrhage to produce sudden collapse or shock so far as I understand the symptoms related. I do not see how the conclusion of a ruptured bladder could have entered into the diagnosis reported in the case by Dr. Ross, inasmuch as there was no previous history of any dilatation or particular trouble with the bladder. There was no traumatism to produce a rupture of this viscus. The bladder is very strong and will stand a great deal of dilatation. It will hold even a gallon or more of water when subjected to the process of gradual dilatation. But there are subjective symptoms which point to it. When a woman is in perfect health it does not seem possible to us that her bladder would rupture suddenly without traumatism or previous symptoms of retention. The criticism I would offer in this case is that rupture of the bladder should have been taken into consideration at all; that the sudden collapse, attended with sighing respiration, difficult breathing, were the result of loss of blood. If there is hemorrhage, I think the cardinal principle of treatment is to open the abdomen and tie the bleeding vessel wherever it may be. That should be our plan of treatment whenever we meet a case in which we have a sudden collapse with all the symptoms of hemorrhage, especially in a woman who has an ectopic gestation. I think an exploratory operation, as suggested by one of the speakers, would be the proper thing to resort to. But it is a very easy matter to lay down rules and say what course a professional brother should have pursued, when perhaps we would do exactly as he did under the circumstances. I do not wish to offer any criticism except in an abstract way, saying what ought to be done, but under the exigencies of a case like this it is a hard matter to say just what we would do. It seems to me, our leading principle, where we have symptoms of hemorrhage or ectopic gestation, is to open the abdomen, inasmuch as it is attended with very little danger, and find the bleeding point, then arrest the hemorrhage with clamp or ligature. If we have great prostration as a result of hemorrhage, we should try to tide the patient over with transfusion of the salt-solution and save her.

Dr. Rosenwasser (closing the discussion).—I did not report this case with the idea of avoiding criticism. I have criticised myself and found fault with my management. I reported it to call attention to certain facts, so that others might not be misled, but operate early, just as I ought to have done if I had known what I know now.

Dr. Ricketts says, if we wait for the appearance of a lump, we may wait too long. He misunderstood my position altogether. I did not wait for a lump. Collapse took place in the afternoon and the following morning a lump appeared filling up the right side from fossa to hypochondrium. I waited for the patient to rally from collapse. The

lump was found at the site referred to during the interval of waiting. The preliminary symptoms all pointed to hemorrhage; the site of the lumps misled me. The collapse took place on Wednesday. On Thursday the lump appeared, and on Friday morning, the patient having rallied from collapse, her pulse being 90 and temperature 100°, I made an examination. I was prepared to find a blood-mass in the pelvis and to operate on that day; but failing to find this mass in the pelvis I was side-tracked and did not operate. During the following two weeks the patient did not develop any alarming symptoms, had a moderate temperature and good pulse, with this mass in the side, when the condition developed as related in the paper.

I have reported this case to warn others not to be misled by the location of the blood-clot. No matter where the mass may be found, such symptoms as here described indicate early operation. I would operate without any hesitation in a similar case.

As to operating for circumscribed hemorrhage, I see no reason to retract what I said in this regard several years ago. Cases of rupture with free hemorrhage should be operated on. Cases of circumscribed hemorrhage which produce very little fever or discomfort will get well by absorption while keeping the patient at absolute rest.

With regard to removing the blood-clot, as spoken of by Dr. Longyear, while I have no personal experience, we know that a blood-clot left in a large bone-cavity will become organized and produce no sepsis. A blood-clot in the abdomen, where a diagnosis of ruptured tubal pregnancy has been made, may become absorbed, and unless it is septic should be left severely alone, if it be not too large. Nature will take care of it. In the cases I have operated on I always removed the blood-clot when the patient was in a condition to have it done.

The question of the relation of hemorrhage and collapse is one that has interested me very much. Hemorrhage is perhaps in most cases the cause of collapse, especially when it occurs in the abdomen.

Recently, in the Cleveland Medical Society the case was reported of a laborer, who, having lifted a heavy board and feeling ill, walked from the factory into the surgeon's office. He had a good pulse and no symptoms of collapse, but died three days subsequently from peritonitis. The autopsy showed ruptured bowel with no symptoms of previous disease or lesion whatever. The bowel had ruptured from the strain of lifting. There was not a particle of blood in the abdominal cavity. This would lead one to deem hemorrhage essential to collapse, but since this case was reported some of my colleagues recall cases in which there was rupture of the bowel without hemorrhage, and still collapse did take place. So I am not quite ready to say that hemorrhage alone would cause collapse.

RUPTURED INTERSTITIAL PREGNANCY.

By L. H. DUNNING, M.D.,
INDIANAPOLIS.

It is my purpose to treat of ruptured interstitial pregnancy occurring before the fifth month. There are at most but three[1] cases on record in which the rupture has taken place into the broad ligament. I shall speak of those only in which the rupture occurs into the peritoneal cavity.

Since an experience with a case last April I have read all the literature upon the subject within my reach, and it has become plain to me that this form of ruptured ectopic gestation has not received the consideration the importance of the subject demands.

In the vast experience of Mr. Tait up to the time of the publication of the first volume of his book upon *Diseases of Women and Abdominal Surgery*,[2] he had not found a single case of rupture of this form of abnormal pregnancy upon the operating-table. He had, however, examined a specimen removed on autopsy. From this case he drew conclusions which stand with one other made by Webster,[3] so far as I am able to learn, as the only suggestions of the proper mode of procedure in this class of cases. Mr. Tait's suggestions are: 1. If a case of interstitial pregnancy be diagnosticated before rupture (which he thinks is not possible), he would dilate the cervical canal, divide the septum separating the uterine from the gestation-cavity, and empty the cornual cavity of the products of gestation, delivering them by the natural way. 2. In case of rupture into the peritoneal cavity Tait's suggestion is to perform abdominal hysterectomy promptly. He believes that in the case furnishing the specimen he examined this could have been easily effected.

[1] Webster: Ectopic Gestation, p. 82.
[2] Tait: Diseases of Women and Abdominal Surgery, vol. i. pp. 481-486.
[3] Webster: Ectopic Gestation, p. 217.

Webster's suggestion is: "If the gestation were early, it might be possible to remove the ovum and close the cavity very thoroughly in the manner recommended by Martin for the closure of the cavity in the wall of a uterus after enucleation of an interstitial fibroid."[1]

The following is a brief history containing the salient points of my case:

April, 1895, I was called by Dr. E. C. Reyer, of Indianapolis, to see Mrs. A., who, he stated, had ectopic gestation. Upon my arrival at 9 A.M., Dr. Reyer gave me the following history, viz.: At 4.30 P.M. the preceding day the patient, who thought herself two months pregnant, was suddenly seized with intense pain through the uterus and became weak. Dr. Reyer was summoned at 8 o'clock. He found the patient in bed, markedly prostrated but not very anemic. There was no bloody flow from the uterus, but there were intermittent pains. The uterus was enlarged and seemingly pregnant. No tumor could be felt in the pelvis. The patient was thought to be pregnant, and fears were expressed by the physician to the friends that there was an abnormal gestation and that rupture had occurred. Quiet was enjoined and an opiate given. No alarm was felt by the family during the night. The following morning, at 8 o'clock, Dr. Reyer called and found the patient greatly prostrated and nearly pulseless. The abdomen was distended and a boggy feeling was elicited by digital examination per vaginam. We made immediate preparations for an abdominal section, as it was evident that death would supervene within a short time if the internal hemorrhage was not arrested. We feared, however, the patient would die upon the table. We yet deemed it our duty to give her the slight chance of life an operation afforded. While preparations were being made about eight ounces of the normal saline solution were transfused into the cellular tissue of the patient in the inframammary region; strychnine and whiskey were given hypodermatically, and also nitroglycerin. The abdomen was opened by incision about 9.45 A.M. A large amount of blood was found in the abdominal and pelvic cavities. A portion of it was quickly removed and the uterus drawn upward near the incision. The Fallopian tube was found free and seemingly normal. The uterus was seen to be much enlarged, and there was found a rent in its walls upon the upper and posterior portion. Through the rent a portion of placenta was pro-

[1] Webster: Ectopic Gestation.

truding. A slight oozing of blood was observed, and a small lacerated artery in the torn wall of the uterus was bleeding feebly. The artery was secured by catch-forceps, and as we waited a moment or two to examine the case, to determine the line of procedure, Dr. Reyer, who had been administering the ether, announced to me he thought the patient dead. He had administered in all but four or five inhalations of the ether, and none at all had been inhaled during the last two minutes, so that the total collapse of the patient could not be attributed to the anesthetic. Artificial respiration was instituted, restoratives administered, and more salt water transfused, all to no purpose—the patient was dead.

A rapid examination of the pelvic organs was made. A ruptured gestation-sac was found in the uterine wall of the right side. The canal of the cornual end of the right Fallopian tube for a distance of half an inch was dilated and continuous with the gestation-cavity within the uterine cornu. The walls of the cavity containing the ovum were uterine. There was an irregular rent in the upper posterior portion of these walls, from which there protruded a portion of the placenta. The membranes of the ovum and the decidua were within the cavity. The fetus was not found. The walls of the gestation-sac in the region of the rupture were very thin, as were they also around the dilated portion of the tube. The tube beyond the dilated portion was normal in appearance and free. It seemed to me normal in length and but slightly, if any, increased in size. I inserted a finger into and through the rent into the cavity containing the ovum. It extended in toward the uterine cavity, but was separated from it by a thin partition.

Here is clearly a case of tubo-ovarian or interstitial pregnancy. How is it to be treated? Shall the bleeding point be tied, as is so often stated by the authors of journal articles? There is often not only one bleeding point, but several, and a placental surface that bleeds. There is no pedicle to be secured as in tubal pregnancy. There is an excessive loss of blood, so that the patient is profoundly shocked. There is a cavity of greater or less size extending into one horn of the uterus and containing the ovum in whole or in part. After the ovum is removed this cavity must be treated in such manner as to prevent an accumulation of the broken-down tissue and exuded blood. We have then to consider, first, such an operative procedure as will induce the smallest loss of blood and the

least degree of shock; second, our method must be such as will secure the patient against a subsequent rupture and the retention of exuded blood and broken-down tissue.

In some instances Tait's proposed method, viz., the removal of the uterus, will unquestionably meet all indications. Each operator will choose his favorite method. For myself, I should employ Baer's, as it requires the least time in my hands and yields the best results.

Cesarean section is attended by less shock and fewer deaths to the mother than Freund's or Porro's operation. I believe a method somewhat similar to Cesarean section should be adopted as superior to extirpation or amputation of the uterus in cases of ruptured interstitial pregnancy.

After opening the abdomen by incision and clearing away enough of the blood to give a good view of the field, the uterus may be pushed up from below with a finger in the vagina or may be seized and drawn up with a tenaculum forceps.

The rent will usually be found above and posterior to the insertion of the Fallopian tube. If the opening caused by the tear of the uterine walls be sufficiently large, let the ovum, including fetus, placenta, and membranes, be quickly delivered. If the rent is not of sufficient size, enlarge it. A sufficiently large opening connecting this gestation-cavity with the uterine cavity should be made. Ordinarily this can be easily accomplished, as these two cavities are separated by only a thin membrane. This membrane may be lifted up by forceps or tenaculum and incised or torn to a sufficient extent to make them as one. A rubber drainage-tube and a strip of iodoform gauze should be passed from above downward through the uterine cavity and cervical canal into the vagina, the upper ends being allowed to remain in the gestation-cavity. The further step of the operation will consist in closing the rent in the uterine wall. This may be done exactly as in case of Cesarean section, viz., with deep and half-deep interrupted sutures; or if the walls be very thin, as they were in my case, the rent may be closed, as in intestinal laceration, by Czerny and Lembert stitches.

Another procedure might have been practised in my case, and it would have been feasible, viz., the walls of the gestation-sac surrounding the rent could have been stitched to the lower end of the abdominal incision and left open for drainage, and subsequently closed by deep sutures passed at the time of the operation. This

procedure I do not consider of as great merit as the one previously described, for the reason that if successful the uterus would remain anchored to the abdominal wall and there would be danger of a resultant fistula.

Should the partition separating the uterine and gestation-cavities be thick or ill-defined, a sound may be introduced into the uterine cavity from below, so as to serve as a guide in the work of connecting the two cavities.

I wish to draw the following conclusions :

1. Ruptured tubo-uterine pregnancy is more frequently fatal than ruptured tubal pregnancy, for the reasons that in the latter case the rupture frequently takes place through the abdominal end of the tube, in which case but slightly vascular adventitious tissue is torn, while in the former case vascular uterine tissue is torn ; and, again, in tubal pregnancy not infrequently the rupture is through the inferior surface of the tube into the folds of the broad ligaments, and thus the amount of hemorrhage is limited, while in tubo-uterine pregnancy such a rupture is rare.

2. In ruptured tubo-uterine pregnancy before the fifth month, unless the abdominal section is done early, the anemia will be profound, so that the patient will be unable to withstand any operation involving prolonged anesthesia or manipulation. The operation should be as free from shock as possible.

3. There is no pedicle to tie.

4. All actively bleeding points must be secured by ligature.

5. Mr. Tait proposes hysterectomy as a proper procedure in such a case. Unquestionably, if the patient is not too greatly shocked or anemic, such a procedure would be clearly indicated.

6. As a measure attended by less risk of shock, the writer proposes the method above described, viz., the tying of bleeding arteries, clearing the gestation-cavity of the ovum, the establishment of free communication between the gestation-cavity and the uterine cavity, the establishment of free drainage by means of tube and gauze, and finally the closure of the rent in the uterine wall by deep and half-deep sutures or by Czerny and Lembert stitches ; or, instead of this method of closure, the stitching of the walls of the gestation-cavity to the lower angle of the incision, with drainage from above and through the uterine cavity, and final closure of the upper opening by tying deep sutures placed and left untied at the time of the operation.

This latter method will probably be found applicable in only a limited number of cases, viz., in those where the uterus is freely movable and can be brought to the abdominal wall without tension.

Whether the methods proposed by the writer have ever been employed he does not know; and whether they will prove of value, only a trial of them can demonstrate.

DISCUSSION.

The President.—Though the subject of ectopic gestation was quite fully discussed this morning, this paper presents to us a different variety of the lesion, and about which something can be said which was not covered this morning. I wish all the gentlemen to participate in this discussion.

Dr. Dunning.—I would like to ask if any of the gentlemen present have met with cases of ruptured interstitial pregnancy before the fifth month?

Dr. Henry T. Byford, of Chicago (by invitation).—I believe Dr. Watkins has had one or two cases of ruptured interstitial pregnancy.

Dr. T. J. Watkins, of Chicago (by invitation).—I have had several cases of extrauterine pregnancy, but none of pure interstitial pregnancy with rupture. I had one case of tubal rupture where the placenta had grown fast to the cornu of the uterus, and where it was impossible to form a pedicle. The conditions in that case were somewhat similar to those of interstitial pregnancy. It was a question whether it was better to amputate the horn of the uterus or to do hysterectomy. The latter method was resorted to, because in amputating the horn of the uterus great tension would have been produced upon sutures. It would have caused an excessive amount of bleeding, and hysterectomy can be done with less risk to life and quicker than amputation of the horn of the uterus.

Dr. Byron Robinson, of Chicago (by invitation).—I was fortunate enough to examine a specimen of Mr. Tait's, he having operated for extrauterine pregnancy. The woman was well developed, had only one tube left, and became pregnant in that part of the tube which runs in the wall of the uterus. One day, in opening the stove-door and shutting it, she suddenly fell to the floor. On examination a little hole was found at the side of the uterus from which she bled to death.

With regard to operating on these cases, it seems to me that anything short of hysterectomy means death to the patient. In abdom-

inal section the whole thing depends upon the condition of the patient. Any surgeon, with good assistants, can take out a normal uterus, but the point is the patient's condition; and it seems to me in cases of interstitial pregnancy, where the patients are nearly dead, the quickest and best way is to apply a Kleeburg's ligature, and this can be done in ten minutes. Any other operation would mean death to the woman.

I have not seen a case of interstitial pregnancy, although I have examined about fifty cases of extrauterine pregnancy.

Dr. Byford: I agree with Dr. Robinson that we must take into consideration the condition of the patient, and that we cannot always do as we would like to do. In these cases we must do something radical to stop the hemorrhage. The author of the paper, I believe, suggested opening the cavity, tying the arteries, and sewing the uterine rent. I think that in extrauterine pregnancy, or any other kind of pregnancy, the arterial hemorrhage which ensues is seldom very serious. The bleeding usually comes from where the placenta is separated, and until the placental site contracts we will have hemorrhage. We have hemorrhage from tubal pregnancy without rupture, hemorrhage through the ostium abdominale into the peritoneal cavity when there is no rupture. The hemorrhage is from the placental site, and is as rapidly fatal as that which occurs as a result of rupture. If I had to deal with a case of interstitial pregnancy in which rupture had taken place, I should either introduce catgut sutures and draw together as far as possible the cavity where the bleeding comes from, and then stitch the opening in the abdominal wound, or take out the uterus. The adhesions in such cases are only slight, the uterine ligaments are relaxed, and you can pull them up and ligate them and remove the uterus very rapidly. I think our aim in dealing with these cases is to get through our work as quickly as possible, to arrest the hemorrhage, and do the best we can.

Dr. A. H. Cordier, of Kansas City, Mo.: I have seen one case undoubtedly of interstitial pregnancy in the practice of Dr. Lanphear, of St. Louis. As he is present I hope he will speak about it. He called me to assist him in the case, and I think it was about the third month.

Dr. Lanphear: The fourth month.

Dr. Cordier: And in addition to the interstitial pregnancy the uterus contained several fibroids, so that it became necessary to do a rapid abdominal hysterectomy. If you cut into one of these cases and expect to find the uterus and surrounding structures in a normal condition, you are badly mistaken. You run up against many obstacles in busy practice. If you expect the hemorrhage to stop, so that you can sew up the rent and have a nice, clean surface (without taking up

and tying individual bloodvessels), you are mistaken. The procedure suggested by the author is too slow. It takes too much time to pick up the bleeding vessels one by one.

Dr. J. Henry Carstens, of Detroit: I would ask Dr. Dunning whether he could not just as well put a large clamp alongside of the uterus to control the vessels on that side, close the abdomen, and let the clamp protrude from the abdominal cavity, so that he can go into the abdomen again and finish the operation later on?

Dr. Dunning (closing the discussion): I am very glad to have expressions of opinion from the members, because, I assure you, I was very much deceived myself in the case. If the patient had lived for a little time, of course I should have done a hysterectomy. But I cannot understand why we could not sew up the rent in a wound with as great safety from hemorrhage as we could in Cesarean section, provided the insertion of the placenta was over tissue that was thick enough so as to have contraction afterward. In Cesarean section we have to deal with the uterine and ovarian arteries as we have in this case. Of course, when we perform Cesarean section we have thicker uterine walls, and the hemorrhage is checked by the contraction of those walls. If the insertion of the placenta were upon the walls of the uterus which had but little muscular tissue in them, I can understand how it would be dangerous to adopt the plan which I suggested, but in other cases I am sure it could be easily accomplished; and having removed the uterus forty-eight times, I know something about the rapidity with which I can do it. I can sew up a wound in one-half the time it takes to remove the uterus, and I know I can do it quicker than any gentleman can do hysterectomy. The shock of hysterectomy is considerable, while that of sewing up a torn wound is very little.

The objection raised against the procedure adopted by me is not well taken. However, I have never done the operation mentioned. I might know how to do it a second time. Our journal articles are very barren of suggestions on this subject. Mr. Tait has written about the subject rationally, but unfortunately has never had a case.

It has been my fortune to meet with a number of cases of ectopic gestation, some eight or nine, and this is the first case of interstitial pregnancy that I have encountered. I hope we will have more intelligent expressions in the articles to be written hereafter regarding the directions for dealing with this condition. A great many of our writers say open the abdomen and stop the bleeding point. These are the principal directions that are given. It seems to me we ought in considering a subject like this to deal with it in such a way as to give intelligent directions to those who are attempting to follow us.

INTRAPERITONEAL ADHESIONS.

By ERNEST T. TAPPEY M.D.,
DETROIT.

Abdominal surgery as it has been so extensively practised in the last few years has established, among other things, that many of the pains, vague, uncomfortable feelings, and so-called dyspepsias are caused by adhesions of various organs in the abdominal and pelvic cavities. The organs in these cavities are particularly liable to become adherent to one another, because they all have, as one part of their peripheral structure, the peritoneum, a membrane very vascular and prone to adhesions and fibrinous exudations. And when we say that organs in these cavities are adherent we mean that the peritoneum covering them is adherent. But though it is the peritoneum in each instance that is adherent, still the symptoms caused are those that pertain to the organ covered by the adherent peritoneum. In operating, for instance, to relieve ovarian pain, we not infrequently find the ovaries themselves not much changed, but bound firmly by more or less extensive adhesions; the adhesions being broken up the pain is relieved. Of course, there was an inflammatory process at some time to cause these adhesions, but in the course of time the adhesions seem to be the principal if not the entire cause of pain. I have in mind a case I operated upon several years ago, expecting to find gall-stones. There were attacks of pain at intervals of two or three weeks, at which time there was jaundice, and there was every reason to suspect gall-stone. I found the gall-bladder of normal size, and, though I could not feel any stones through the walls, I incised it and explored its interior carefully. There were no stones. I found, however, extensive adhesions binding the duodenum and stomach to the posterior abdominal wall. Then, passing a probe into the duct, I found it patulous to within a short distance of the intestine; the duodenum was

bound fast in such a way as to bend the duct and obstruct it. The adhesions were broken up, the wound in the gall-bladder was closed, and the patient recovered and has been quite free from pain since. Operation was done November 25, 1892.

I presume there had been gall-stones in this case and that the adhesions had been caused by their presence; but when I operated it was the adhesions which caused the trouble. After narrating this case to a well-known surgeon, whose name I shall not mention, he said: "The stone had ulcerated through the walls of the duct or bladder and was somewhere there, else how could the adhesions be there?" I think, however, that the frequent passage of gall-stones, or even their presence with the congestion they may cause, would be sufficient explanation of the adhesions. Another frequent location of adhesions is the neighborhood of the appendix. They may be caused by inflammation of the appendix, or as the result of an operation for appendicitis. Every case of laparatomy is probably followed by some adhesions of peritoneal surfaces. For example, in a recent case the operation of oöphorectomy was followed by a very severe and persistent form of cystitis and great pain in the region of the stump of the left broad ligament. Two years after the first operation the abdomen was opened again (March 22, 1895) and the colon found adherent to the bladder-wall and to the stump of the broad ligament, the first adhesions accounting for the persistent nature of the cystitis, it having been caused and kept up, in all probability, by the transmigration of the colon-bacillus through the walls of the intestine and bladder. The pain was caused by the tension at the point of adhesion to the stump of the broad ligament. The adhesions, formed from whatever cause, may be the occasion of pain and functional disturbance, not only by tension, as mentioned above, but by the formation of internal hernia, which may become strangulated. Two loops of intestine may become adherent so as to cause obstruction, or in such a manner as to favor volvulus. Pain in the female pelvis is not infrequently caused by adhesions alone, so far as we can judge by the look of the organs. It is frequently the experience of the surgeon that he opens the pelvis to see what may be the cause of the pain in the region of the ovaries —for he has not been able to make a diagnosis otherwise—and he finds apparently healthy ovaries, except that they are adherent. He either removes the organs or breaks up the adhesions and

relieves the pain. The uterus is fixed in some abnormal position by adhesions; they are severed and the symptom relieved.

Riedel, of Jena, presents an exhaustive paper on this subject.[1] He has evidently, from the number of cases he cites, had an extensive experience, and he treats the subject in a most interesting manner. He begins by stating that during the past year a great number of laparatomies have been performed on account of adhesions of the viscera, the existence of inflammatory bands in the abdominal cavity, and the kinking and narrowing of the intestines due to them. He states that most of the operations undertaken to remedy these conditions have been successful and that the good results have remained for months and years in a number of instances. In considering this subject one of the most obvious objections to operation would be the likelihood of a formation of new adhesions. Riedel admits that new adhesions are sure to be formed, but maintains that the symptoms caused by the original adhesions are almost invariably relieved; and my own experience is the same, though it is quite limited, as far as those cases are concerned in which only adhesions have been divided and no tissue or organ has been removed. Riedel mentions the following causes of adhesions in the abdominal cavity; they suggest at once the approximate locality in which they exist, except in the instance of contusion of abdomen and of detached lipomata: (*a*) contusion of the abdomen, (*b*) ulcer of the stomach, (*c*) inflammations about the gall-bladder, (*d*) inflammations about the gall-bladder and ascending colon, (*e*) inflammations of the gall-bladder and vermiform appendix together, (*f*) inflammations of the vermiform appendix alone, (*g*) inflammatory processes in the colon, (*h*) lipomata that have become detached from their pedicles inside the peritoneal cavity. Besides these there are adhesions found in the pelvic cavity caused by (1) inflammation of the ovaries or tubes, or both, (2) inflammation of the uterus, (3) inflammation of and about the rectum, (4) inflammation of the bladder.

The question of diagnosis is often perplexing and in many instances impossible without abdominal section, but there are considerations which will aid materially. Wherever there is pain, and palpation does not reveal any tumor or other enlargement, adhesion

[1] Archiv für klinische Chirurgie, vol. xlvii.

is one of the possible causes. In obstruction of the intestines, for instance, if the cause be intussusception or the pressure of a tumor or of a fecal mass, it will be possible, very likely, to feel a mass. If, then, no mass be felt, the cause may be paralysis of the bowel, stricture, or adhesions. If paralysis be the cause, no peristaltic action of the bowels can be seen through the abdominal walls, and it can be in the case of stricture or adhesions. It would probably be impossible to distinguish between these two conditions, though there might be a sensation of greater resistance on palpation in the case of adhesion. The localization of the adhesions is, of course, just as difficult as, and not more so than, that of stricture, and will often have to be done after the abdomen is open. I believe it to be eminently proper to subject cases of chronic dyspepsia, chronic and obstinate constipation, and cases of persistent pain which is caused by accumulation of flatus, after suitable medication has been used unsuccessfully, to exploratory opening of the abdomen to determine whether there be adhesions and for the purpose of severing them.

DISCUSSION ON PAPERS OF DRS. TAPPEY AND MACDONALD.[1]

Dr. Herman E. Hayd, of Buffalo.—Mr. President: I had a very unpleasant experience, and the case was of such exceptional interest to us in the hospital I will report it here. It simply shows what serious conditions may result when we least expect them, even after the simplest abdominal section. A young woman, a bride, came to Buffalo, and while passing through was sent to me. She complained of dyspareunia. I examined her and found upon the left side a small ovarian cyst and on the right an enlarged ovary. She was twenty-two years of age, and had been married three weeks. The cyst was tender and painful, and I advised her to have an immediate operation. She would not acquiesce, but was willing to go to bed and temporize in the hope that the inflammatory symptoms would pass away and she would be restored to comparatively good health. At all events she went to bed. Poultices were applied, hot-water injections given, and

[1] Several ineffectual attempts have been made to obtain Dr. Macdonald's paper for publication in the Transactions, but we are reluctantly compelled to proceed without it.

such treatment as would naturally be called for. In the course of ten days she left the city and continued her wedding journey.

About four months afterward she returned to Buffalo, having become satisfied with the diagnosis I had made and was willing to submit to operation. I took her to the Woman's Hospital, on the following day operated, removed a small adherent cyst on the left side about the size of one's fist, and an hypertrophied ovary on the right side. The operation was simple, was done with the greatest dispatch, and the woman was in bed in less than half an hour. On the following day her bowels moved and there had been no vomiting or nausea, and on the fourth day after the operation she began to take solid food. On the seventh day she complained of pain in the left side, and upon palpation there was some muscular tension and a swelling which could be felt through the vagina and which we attributed to a post-operative cellulitis. I might say that I used silk, that it was sterilized at the time of operation, and every other precaution was taken, as is customary in this kind of work. I removed the dressings with the expectation of finding a stitch-hole or fecal abscess which might account for the pain. However, the wound had healed kindly and I removed the stitches and applied a poultice. Her temperature on the evening of the eighth day was 99½°, pulse 76. We gave her a little codeia and purged her freely. But she did not respond to the cathartic as she did in the earlier part of her illness. The pain kept up and there was a little temperature; on the thirteenth day she commenced to vomit, and on the same evening the vomiting was stercoraceous. I washed the stomach out immediately, and again at eleven o'clock. I also gave a large rectal injection.

The stomach was considerably quieted by reason of the lavage, and on the following morning I opened the abdomen and found an interesting condition. There was a localized collection of pus at the site of the left stump, the coils of the small intestine were adherent to each other and formed a wall for the abscess, and at one point the bowel had twisted on itself and the lumen was so lessened that it was impossible for the contents to pass through, while above the bowel was as large as my wrist. It was the first experience I have had of intestinal obstruction, and where I least expected it, and where every precaution was taken. Dr. Frederick saw the case with me, and so did Dr. Lothrop, but none of us had the remotest idea that such a grave condition was setting in, as the patient's general condition was good and she seemed to be better the last two days.

Dr. A. H. Cordier, of Kansas City, Mo.—I want to present a specimen to the Association of post-peritoneal intestinal obstruction,

which emphasizes the fact that as soon as these cases are recognized we should not hesitate to reopen the abdomen and so save the lives of patients in the great majority of instances. This specimen I will pass around. It will not be necessary to do a resection at all in a case like this, but simply pulling the adhesions apart from the coil of bowel would have saved my patient's life. You will notice that the small intestine has become adherent to the pedicle in vaginal hysterectomy, and the patient died on the fourteenth day following the operation on account of the trivial pathological condition which you observe. It would have been an easy matter to have pulled this coil of bowel into the vaginal opening, separate the adhesions, and liberate the intestine. It was a notable fact in this particular case that vomiting was not of a fecal character, and it occurred only late. The patient suffered little pain, and the obstruction was only partial. I am a warm believer in the Murphy button, and it is better than any device I have tried.

With reference to the contrivance presented by Dr. Grant, I will say that it is an ingenious one, but there is one point in it which is objectionable—namely, it makes a lateral anastomosis instead of an end-to-end. Another point is with regard to the mechanism of it, especially where we have suturing to do. Let us suppose, for instance, that we have the bowel this way (illustrating), joined side to side. In this position it is a hard matter to suture the bowel in this way without opening the gut in the centre. The sutures are on the outside, and what takes place? The first thing you do is, you cut the bowel. There is eversion of the mucous membrane. It rolls out, and you have this condition of affairs. You do not get union of the peritoneum, the muscle, and the mucous membrane by operating in this way. Where pressure takes place following the use of the Murphy button, it is the thing you desire in intestinal work. The different structures are united in the original position, and by the union you get by the Murphy button you obviate the cicatrix which follows other methods.

I have a specimen, removed post-mortem from a dog, in which an end-to-end anastomosis was done, and you would have to search a long time before you would be able to find where the anastomosis was made. So perfect has been the result that absolutely no contraction followed the operation.

Dr. H. W. Longyear, of Detroit.—This matter of intraperitoneal adhesions, especially following operations, is certainly very important, and can only be prevented by attention to detail in our work inside of the abdomen; particularly in regard to the treatment of the stump is

this to be done, and also in regard to the treatment of old adhesions that are broken up during operation. In the treatment of the stump there are two things necessary: First, that we should use such ligature-material as shall not prove to be an irritant after its usefulness has ceased as a ligature. Second, it should be so placed as not to leave dead material at the end of the stump. In doing the first I use kangaroo-tendon, which is absorbed after its usefulness has ceased; and, second, I place it in such a way in the stump as will permit of slight superficial circulation to take place, so that the stump will not be entirely strangulated. The method may be called double or multiple partial ligation. (This point was demonstrated by Dr. Longyear on

FIG. 1.

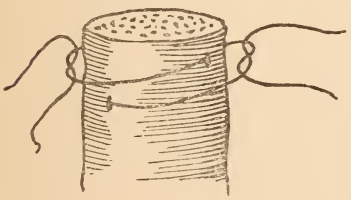
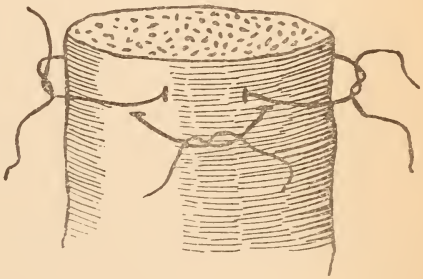


FIG. 2.



the blackboard. See Figs. 1 and 2.) I also make use of the recommendation of Dr. Morris—namely, the application of aristol to raw surfaces where adhesions have been broken up.

DR. BYRON ROBINSON, of Chicago (by invitation).—I would say in reference to the paper of Dr. Tappey, in which he speaks of operating for adhesions, that I have just finished 150 consecutive autopsies at the County Hospital, and the result is this, that 72 per cent. of inflammations were found around the cecum and appendix, 68 per cent. around the gall-bladder, 70 to 80 per cent. in the pelvis, and 82 per cent. in the meso-sigmoid. So Dr. Tappey will have to be careful which one he operates upon. These were ordinary people who died in Cook County Hospital of other diseases than adhesions. Somebody will suffer if he is not careful. The whole story is right here in discussing this subject—namely, the suffering comes from the dragging on the small intestine, the bladder, and the tubes, because they have a high peristalsis. That is, to my mind, the whole thing in a nutshell. The above adhesions were calculated carefully, and where a single doubt was entertained adhesions were left out.

In my experimental intestinal work on some 250 dogs, 80 per cent.

of the dogs had adhesions after operation. We had adhesions therefore in nearly all of our cases. No child under three years of age showed adhesions in the sphincters, the flexors of the bowel, or anywhere else. Again, there were adhesions of the psoas and iliacus muscles and the crura of the diaphragm. These adhesions are produced by irritation of the peritoneum, and it throws out a plastic exudate, the result being an adhesive peritonitis. An operation is needed not for the adhesions themselves, but for the purpose of avoiding dragging and tugging on the bowel, which is peristalsis, as well as on the bladder and the tubes. The dragging pain in adhesions arises from hampering peristalsis—checking it. The chief mobile and peristaltic organs affected are the small intestine, sigmoid, bladder, and Fallopian tubes. And the chief seat of the adhesions is at the amputated end of the Fallopian tube, where its exposed mucosa periodically drains septic matter into the peritoneal cavity. The exposed mucosa at the ends of the tubes should be buried with a piece of omentum or peritoneum.

Dr. Albert Goldspohn, of Chicago.—The prevention of adhesions following operations is one of the next conquests that abdominal surgeons need to make. The observations made by my friend, Dr. Robinson, are extremely interesting, but I would take exception to the idea that mere mechanical play or friction of peritoneal surfaces can give rise to peritonitis. I had not the privilege of listening to the first paper on the subject of intestinal adhesions, so I cannot comment upon it. I will therefore simply call attention to the causes for peritoneal adhesions that have been determined by very exhaustive and long-continued experiments on the lower animals, by men of acknowledged reputation as to technique and general ability, and who made use of not only the best methods and apparatus, but the most complete bacteriological facts at present known. These investigations were chiefly carried on by Thad, Dembowski, Herman Thomson, of Dorpat, M. Walthard, of Berne, George Wegner, and a number of others, who came to the aggregate conclusion that the first and most important factor to bring about peritoneal adhesions is septic infection. The next factors are foreign bodies, as sutures, ligatures, gauze, sponges, drainage-tubes, ligatured stumps, searings, as produced by Paquelin cautery, etc. By a careful series of investigations Walthard determined that exposure of peritoneal surfaces for twenty minutes to dry aseptic air would cause them to be dried out enough to be injured; so that if they are kept in contact with each other for any length of time after they are returned into the abdomen they will become adherent; that is, exposing to dry aseptic air two knuckles of intestine that are

held adjacent to each other by sutured mesenteries and then buried in the abdomen, would invariably become adherent after being exposed for twenty minutes and opening up the animal at the end of twelve days. When such peritoneal surfaces were not adjacent to each other it would leave an indurated sort of opaque, hazy decoloration, with fine fibrous particles, which would be found when the abdomen was opened.

Furthermore, it has been practically settled that mere traumata of the peritoneal surfaces, if they are aseptic, and are not influenced by foreign bodies, like sutures, ligatures, etc., are *not* followed by adhesions. Thus the peritoneum has been extensively abraded by sterile tooth-brushes, and large patches the size of the palm of the hand have been exsected, and yet no adhesions followed. These wounds were found glazed over by peritoneum later. The introduction of antiseptics, as sublimate and carbolic acid, usually gave rise to no results, because the animal died from the toxic effect too rapidly. But taking other irritant substances, as turpentine and oil of origanum, when introduced into the peritoneal cavity, while they caused much pain, they did not give rise to peritoneal adhesions. Likewise, blood, if it is aseptic, does not do so.

In regard to the matter of adhesions coming from atmospheric exposure, Walthard and others have adopted what they call moist asepsis; that is, instead of using sponges that are perfectly dry, as taken from the sterilizer, introduced into the abdomen, and then thrown away, they use exclusively moist gauze sponges; and as the best liquid to produce this moisture with they have chosen the solution devised by Prof. Pavel, of Berne, which consists of the normal salt solution ($\frac{3}{4}$ of 1 per cent. of chloride of sodium), to which is added $\frac{1}{4}$ of 1 per cent. of calcined carbonate of soda. This liquid they have proven to be stable, not susceptible to decomposition, and at a temperature of 104° Fahrenheit, or 40° Celsus, it has quite a considerable antiseptic effect; it does not pain when applied in a wound, and on peritoneal surfaces they declare it to be the most innocent liquid known.

The results with its use, as published by an assistant of Sänger, are that formerly, during two years of dry asepsis, Sänger had 132 abdominal sections, out of which 10 died; only one of these was from sepsis, and 9 out of 132 sections died from intestinal obstruction, following as a result of peritoneal adhesions or something akin to that. During two years after this, when Sänger had adopted moist asepsis with this liquid, and carefully guarded all peritoneal surfaces from contact with air, he had 76 abdominal sections, out of which only two died, and

these were bad cases of extrauterine pregnancy. There were no deaths from peritoneal adhesions. In brief, of the 132 cases with *dry* asepsis, 9 died as the result of adhesions; and in 76 cases with *moist* asepsis there were no deaths from that source.

Dr. J. B. Murphy, of Chicago.—This discussion has already attained such a wide scope and the subject is of such great importance, that it is difficult to treat it in a limited time. In the first place, I wish to compliment Dr. Macdonald on his excellent description of the pathology, symptomatology, and treatment of ileus. He has divided it into adynamic ileus or that which is the result of paralysis. He omitted the dynamic form. He also spoke of mechanical ileus. Adynamic ileus is the form of obstruction that has perplexed surgeons and physicians for so many years. In reading the history of ileus, you must have noticed from time to time that some physicians and surgeons report 30 per cent. of the cases as having recovered without operation. You have undoubtedly read other surgeons' articles in which they claim 100 per cent. of the cases die without operation. Why this disparity? Because the gentlemen had different conditions to deal with. If we will take the subject of intestinal obstruction and in our diagnosis subdivide it into the varieties which Dr. Macdonald did, excluding ileus from paralysis of the afferent nerve, ileus from reflex paralysis (which is one of the most important types to differentiate from mechanical ileus), and the ileus of sepsis, and with them also the variety included in dynamic ileus, these excluded we have remaining only mechanical ileus. If all practitioners included only mechanical ileus, their experiences would be alike. If we throw out these varieties, our statistics will agree. We must understand by ileus not a pathological entity, but a train of symptoms—inability to produce bowel movement, nausea and vomiting and tympanites being three of the most important symptoms of the condition. Occasionally we have pain, but rarely fever. That is what ileus implies to the general practitioner. It does not mean that there is a band around the bowel nor an invagination which occludes it. It means the patient has a train of symptoms, and that it is impossible for him or his attendant to get anything to pass through his bowel, and the author has shown in his paper that for that condition it is not at all necessary that it be mechanical obstruction.

Let us now consider ileus from a practical standpoint, that of treatment; what class of cases will get well with expectant treatment, and what class of cases will die? The adynamic ileus or paralysis *can* recover perfectly with the expectant treatment, and the dynamic ileus in

the great majority of cases *do* recover with expectant treatment. In the mechanical form of intestinal obstruction the patients die unless operated upon. To make ourselves practical, we must be able at the bedside after having made our examination either to say that this is a case of adynamic or dynamic ileus, which does not necessarily require an operation, or that it is a case of mechanical ileus and demands immediate operation. With the small percentage of danger attending exploratory opening of the abdomen, and ease in determining the seat of obstruction, we are not justified in delaying operation. Dr. Macdonald emphasized the importance of peristalsis. In adynamic ileus there is paralysis of the muscles of the bowel. The bowels are distended, and when the stethoscope is placed upon the abdomen there is scarcely an audible sound elicited except the splash of water produced by the contraction of the diaphragm. In dynamic ileus, the variety most difficult to differentiate from the mechanical, *i. e.*, the ileus of lead-colic, the peristalsis increases up to the point of obstruction, and if we open the abdomen, as I did on one occasion for lead-colic, we will find the bowel for many inches in length contracted to the size of my little finger and completely occluded. The physician in charge of the patient I refer to had treated him in five different attacks of lead-colic previously. He believed there was obstruction. On opening the abdomen and drawing out the bowel, we found one of the conditions we find in mechanical ileus—namely, distention of the bowel above the position of spasmodic contraction, with complete occlusion of the contracted portion. The position of obstruction was easily recognized through the thin abdominal wall. In dynamic ileus there is local paralysis of the muscle of the bowel. If the peritonitis be local, we can take the stethoscope and outline the area of peristalsis. I have done it repeatedly in appendicitis, and in my statistics on this disease I am going to record the percentage.

In reflex ileus where we have a gall-stone impacted in the cystic duct, or a calculus impacted in the ureter, or where we have compression of the ovary with fibroid, we have in all these conditions exactly the same inability to produce bowel-movement—tympanites, nausea and vomiting. This is the reflex variety, and three times in the last year I have been called to operate on cases of intestinal obstruction, in each of which there was occlusion of the cystic duct. I operated subsequently for gall-stones.

I want to congratulate Dr. Macdonald because he is advancing in the right line. There is no surgical disease so badly treated by the general practitioner, often by the surgeon as well, as that of intestinal

obstruction, when he has not the courage of his convictions as far as the diagnosis is concerned. If we recognize the signs of local or circumscribed dulness, increased or diminished peristalsis, the presence or absence of tumor or tumefaction, the presence or absence of temperature, we will be able to differentiate between adynamic and dynamic ileus and mechanical ileus; but if we are convinced that we cannot make a definite diagnosis in the individual case, it is our duty to call in somebody that can. Why? Because the patient's life is jeopardized by waiting. He might still be in a condition to permit a resection of the bowel, but resection of the bowel is not all. How many of the surgeons here have seen cases of strangulated hernia where the bowel had been reduced without resection, the canal merely opened, the hernia returned, and still the patient died. Why does he die? Because the intestinal canal was obstructed for a considerable length of time, and there was generated in the circulation something that depressed and poisoned the patient. The patient goes on four or five days with intestinal obstruction, and just as soon as we allow the contents to move on sepsis commences and the patient dies in three or four hours. We have not yet determined the source nor character of the toxic substance, but we know that patients die where no resection has been made; they die without any other operation than the mere liberation of the bowel.

The subject of adhesions introduced by Dr. Byron Robinson is rather too complicated to discuss at this time; we must have something more than the theory advanced before we can say that the contraction of the bowel or of the muscle beneath the wall of the intestine will produce an adhesion. To be convinced I must be shown something more palpable than that. The intestines are protected by endothelium, and if the mere action of contraction of the bowel is to produce adhesion, that contraction of the bladder is to produce adhesion, and that contraction of the iliac muscle is to produce adhesion, as Dr. Robinson advocates, then I fear we are all in great danger, as these muscles are constantly contracting. We may have adhesions as a result of abrasions; we may have abrasions caused by the streptococcus or staphylococcus infection. We can make an abrasion with a blister or with an antiseptic solution, as one of the gentlemen suggested, but the adhesions will depend upon the degree of destruction of the tissue. Furthermore, if salt solution be poured out of a syringe upon the wall of the intestine for ten minutes, elevated four feet, it will destroy the endothelium of the bowel. It will abrade that surface.

Dr. Cordier.—What strength of salt solution?

Dr. Murphy.—Physiological salt solution (6–1000), if poured from that height and kept up for ten minutes. When we lift up the bowel we will find its gloss is gone, and we have a ground prepared for the formation of adhesions. I believe the secret of adhesion is abrasion, and I do not believe the contraction of a muscle beneath the bowel will produce any such condition.

Dr. W. E. B. Davis, of Birmingham, Ala.—Dr. Macdonald has emphasized a most important symptom in distinguishing between mechanical and adynamic obstruction, but we may have a mechanical obstruction where we do not have peristalsis. Take a late case, where we have had mechanical obstruction for some time, and in such a case you get a peritonitis and paralysis of the bowel. Then, too, we have a great deal of difficulty in making out a case of mechanical obstruction after abdominal operations. You all know how hard it is to get the bowels to act in favorable cases. You place your ear upon the abdomen, you do not hear a sound; this is a favorable condition for adhesions to form and to produce mechanical obstruction. So you get adynamic obstruction followed by mechanical obstruction, which causes a great deal of difficulty in making a correct diagnosis. It is hard to know that you are operating for mechanical obstruction soon after an abdominal section.

With reference to adhesions, in cases in which I have reopened the abdomen, and also in a large number of experiments on animals, I have found that adhesions do not cause the trouble that we have been led to believe by some. We can have the intestines agglutinated, as it were, without any symptoms. The adhesions we have in appendicitis and in inflammation around the gall-bladder rarely cause trouble. They generally form at the proper time. The intestines adjust themselves in proper position before the adhesions take place, and we do not often get intestinal obstruction from them. Inflammation in the appendiceal region, the region of the gall-bladder, and around the tubes and ovaries, as has been pointed out, is the cause of the obstructive symptoms. The text-books report more cases of mechanical obstruction than we are able to find in practice. The majority of cases of intestinal obstruction that are reported by the general physician are cases of suppurative peritonitis, and when the surgeon receives a telegram to go to operate for obstruction he usually expects to find such a case.

Dr. D. A. K. Steele, of Chicago.—The symptomatology and pathology of this subject have been gone into so thoroughly and admirably by Dr. Macdonald and those who have taken part in the

discussion that there remains little, if anything, to be added to it. There is, however, a practical point to which I wish to allude, and that is in reference to how we shall relieve the obstruction—the mode or point of incision. We have been told what to do when we get within the abdomen. Practical experience has taught me that in the majority of cases of intestinal obstruction the obstruction is upon the right side of the abdomen, or in the ileo-cecal region, or the gall-bladder, so that the median incision does not afford the most ready access to the point we want to attack or relieve. I therefore think that the oblique incision to the right of the right rectus gives better access, and exposes the parts that are invaginated or adherent more freely. When you have a distended intestine, making it necessary to allow the intestines to come without the abdominal cavity, the intestine is much more readily replaced than when they escape through a median incision. I would like to hear an expression from Dr. Macdonald in reference to this point, as I do think the lateral incision affords better access where we must do our intra-abdominal work for the relief of the obstruction.

Dr. L. H. Dunning, of Indianapolis.—I would like to have Dr. Macdonald, in closing, touch upon the influence and importance of time in which the obstruction has existed. I have had an unfortunate experience in dealing with cases of obstruction of the bowels, having operated for mechanical obstruction in eleven cases, and was unfortunate in having six of this number die. All of the patients that were operated upon within two days recovered, and those operated on later all died. I think that point has not been sufficiently emphasized either in the paper or in the discussion.

In Indianapolis, in three cases of obstruction of the bowels, two of which were fatal, resulted from adhesions following the removal of the tubes and ovaries. These cases led me to do considerable thinking, inasmuch as I saw two cases, one of them being my own, result fatally, and the other was seen in consultation.

As to the means we should adopt to prevent these adhesions, Dr. Longyear has given us an illustration of the method which he adopts, and the only criticism I would offer is in regard to removal of the tube and ovary. If this was the stump (illustrating) and this surface is cut off here, a raw surface is left which will cause adhesions to occur in this manner. It seems to me, we should endeavor to close all raw surfaces upon the stump in removing the tubes and ovaries, which is easily accomplished without any danger whatever. If the stump is tied *en masse*, the tube should be cut off singly and separately. I am firmly convinced of this. The tube does not need a ligature. It may

be cut off to the horn of the uterus and stitched over. I cut the tube off, tie the artery, and sew it up. This a point that should be emphasized and kept in mind—to cover all raw surfaces, if possible, and we can do that with the stump.

I had an interesting case of reflex obstruction of the bowels that I would like to mention. I operated on a case of ectopic gestation of five and a half months. The patient had stercoraceous vomiting twenty-four hours before operation, and there was no possibility of obtaining a movement of the bowels. On opening the abdomen and lifting out the sac we had an expulsion of gas from the rectum, and in two or three hours thereafter the patient had a spontaneous movement of the bowels. The obstruction was due to reflex action, which was speedily relieved.

Dr. Thomas J. Maxwell, of Keokuk, Iowa.—I have a case of intestinal obstruction, the report of which is written out *in extenso*, which I shall read when called on to do so, but it would be proper to relate it briefly in connection with this discussion, inasmuch as it is a peculiar one. Nothing like it has been mentioned among the cases of mechanical obstruction of the bowel. A young man, twenty-five years of age, healthy, had obstruction of the bowels which continued for eight or nine days. He was treated by his local physician without avail. He was given medicine by the stomach and also injections by the bowels repeatedly. The day before I saw the case he was treated with elaterium. He had very little pain, and when I saw him the abdomen was flaccid. There was no distention of the bowels with gas. There was, however, a little rise of temperature the day before I was called to see him. Pulse at that time was 100, and temperature 102°. On making pressure over the abdomen there was no tenderness, but apparently there was an indistinct fulness a little to the right and above the umbilicus. I was at a loss to determine the exact condition of affairs. I made a central incision, and the peritoneal covering was perfectly bright and free from congestion. I introduced my hand into the abdomen and felt down to the cecum. There was nothing abnormal there, and then I passed it up along the ascending colon, and found nothing to indicate obstruction there. But between the liver and stomach I could feel some fulness, although very much interfered with by the omental folds which obstructed my manipulation. I then got out the bowel, protecting it with sterilized cloths wrung out of sterilized hot water. As I approached the upper part of the jejunum, I there discovered that there was little tension, and the bowel came out with some resistance. The congestion was considerable. The mesen-

teric veins were enlarged and the bowel was entirely empty, no gas or fluid being in it. The upper part of the bowel was congested, red, dark, and finally the last fold of it came out with little resistance, and presently fluid gurgled down through into the bowel as it was straightened out, whereas it was empty before that. Presently the bowel regained its natural appearance. In making a further examination I was satisfied that the obstruction was at the foramen of Winslow, that little opening between the lesser and greater omentum, about an inch in diameter, between the lesser curvature of the stomach and the liver. The bowel had been in some unaccountable way tucked through the foramen of Winslow, but not tightly enough to strangulate it nor to produce pain, but high enough, so that everything passed below that and very little was above, except what was in the duodenum and the stomach; hence, there was no vomiting of stercoraceous matter, only what was taken into the stomach, and what secretion there might be in the duodenum was ejected from the stomach.

This case I will report in detail when I read my paper. I give it to you as a rare instance.

Dr. Tappey (closing the discussion on his part).—I was very glad to see the specimen exhibited by Dr. Cordier. It is very interesting as illustrating the form of obstruction caused by adhesions. I have noticed that several of the members have confined their remarks to the discussion of adhesions caused by operations in the peritoneal cavity. In my paper I spoke of and illustrated those cases also, but I also had in mind principally the adhesions that occur without any operation. I called attention to the paper written by Dr. Riedel, of Jena, in which he cites a great number of cases in which symptoms of distress of various sorts, dyspepsias and pain, have been caused by adhesions; in which obstruction has taken place without previous interference with the bowel, and surgical interference has been resorted to to relieve the symptoms. I hoped that some remarks would be made upon that particular phase of the subject.

I fail to see the applicability of the remarks of Dr. Robinson to the subject in hand. He spoke of a great number of adhesions which he had found post-mortem, and made a rather ominous warning against opening the abdomen. I desire to assure him that I had no intention, nor have I now, of opening the abdomen or advising it, except for the relief of symptoms calling for that operation. No good surgeon would think of searching around for adhesions unless there were symptoms caused by them.

Dr. Macdonald (closing the discussion).—Outside of answering a

few questions that have been propounded, there remains little for me to say, except to thank the Fellows of the Association for their kindly statements on my paper.

Dr. Maxwell's remark in relation to hernia in the foramen of Winslow covered in the abstract the statement I made of the condition of internal hernia. It is not such an unusual thing for internal hernia to occur in the foramen of Winslow and through slits in the mesentery.

With regard to Dr. Steele's question as to the site of the incision, I think that is largely a matter of personal equation. I never feel so safe and so comfortable as when I make my incision in the median line. I can make it quickly, have less hemorrhage, do better work, and close the incision more quickly, than any other I make; and in making most laparatomies for intestinal obstruction, which are exploratory, I make a median incision relatively high—that is, just below the umbilicus. In that way with my short fingers I can reach into the abdomen.

In regard to the time of operation, abdominal surgery of any sort is not to be taken hold of by any slow schedule. Men must operate with confidence, and the earlier we operate for such conditions the sooner we reach definite conclusions, and the more patients we are sure to save. It is inevitable to get the combined condition to which Dr. Davis has referred; that is, we have, in addition to a purely mechanical obstruction, peritonitis. Simple occlusion of the bowel seems to allow migration of septic organisms and bring about a general condition of peritonitis. Saving of time in these operations is an important element, particularly when we have to deal with those cases that get into a bad general condition, with bad pulse, with blue fingers and lips, and with a good deal of abdominal distention. Simply inserting a Murphy button or doing a lateral anastomosis in these cases does very little good. We should open the abdomen, secure the loose portion of the distended intestine, sew it into the wound, open it, get the material out of the intestine, and stop poisoning the patient. If we find the patient's condition improves after a week or two weeks, then we may, if necessary, do a secondary operation. In the majority of cases I have not had to do a secondary operation. I have had to do very few intestinal resections for that condition—fistula. I get a larger percentage of recoveries by doing a life-saving operation than any operation which I can do in intestinal surgery.

A CLINICAL CONTRIBUTION TO THE STUDY OF THE LATERAL DISPLACEMENTS OF THE UTERUS.

By EDWARD J. ILL, M.D.,
NEWARK.

In a recent text-book[1] on gynecology, lateral displacements are considered by two whole lines, and in part of a third it is noted that they are occasionally congenital.

Another[2] simply refers to the definition of latero-flexion and versions, and the rare occurrence as such. Still another[5] concedes that marked deviations of the uterus from the normal position are almost always attended by symptoms which loudly call for relief. Under pathological deviations are mentioned various displacements, but in vain do I look for any discussion of lateral ones. Mundé,[7] in his *Minor Surgical Gynecology*, devotes a dozen lines to the futile treatment of the displacements under consideration by pessary, but in a paper read before the American Gynecological Society[12] on "The Present Treatment of Uterine Displacements" he does not even mention the subject.

Hart and Barbour[9] say: "A change to either side is produced by pressure or by traction; when produced by cicatricial contraction these are the most important conditions we have to deal with." Scanzoni[10] speaks of lateral displacements as most frequently of congenital origin and due to a shortening of either ligaments, and of no practical interest. Thomas[11], in the fourth edition of his work, says that "the chief importance is connected with diagnosis. . . . . Of all varieties of flexions this is the most likely to require the use of the intrauterine stem." Emmet gives us some points of interest in his laboriously compiled statistics, worked out with so much diligence and labor. They refer mainly to the length of time of menstruation and menstrual pain. In his statistics "it

is shown also that the unmarried are less liable to this form of flexure, but the liability is twofold for the sterile, while that for the fruitful woman is about the same per cent. below the average as that for the sterile is above it." Emmet further says (page 333): "Lateral flexures are thought to be formed in after-life as the result of shortening of the broad ligament from inflammation on the side of the flexion, a version having previously existed either forward or backward. I have never met with any evidence conclusive enough to settle the point that this form of flexure was ever congenital. I have become confirmed in the opinion that lateral versions are the consequence of inflammation."

B. S. Schultze[16] treats of lateral displacements of the uterus chiefly as of secondary origin to inflammatory exudates, but in a short sentence[18] he speaks of old latero-positions and versions for which he could not find an acute cause. These cases have stubbornly resisted all treatment. The patients were great sufferers from the severe anemic and hysterical symptoms, which he thought were due to disturbances in the circulation and dragging on the nerves running through the broad ligament. He further says we cannot expect to correct this displacement by mechanical means.

Prof. Schultze is the only writer I could find who has observed that lateral displacements produce symptoms.

In a clinical lecture delivered at the New York Polyclinic by Prof. Mundé[17] the following interesting case is presented; but unfortunately the lecturer does not recognize the disease as causing the symptoms which the patient complains of, nor does he attempt to explain the symptoms:

"Patient is forty years old and is single; she flows every four weeks for three days. She complains of much pain during menstruation and also of pain on the *right side of the abdomen* and back. She also complains of neuralgic pains all over her head, pain in epigastrium, and of vomiting. She is sent by Prof. Gray to see if there is any cause for her neuralgia in the pelvis.

"Digital examination shows a peculiar and rather uncommon displacement of the uterus, but one which I think has nothing to do with her symptoms. Instead of lying in the normal position, it is tilted with the fundus to the left and is sharply anteflexed, and the uterus cannot be readily returned to its normal position."

He goes on to say that "the displacement in itself does not give

rise to any local or reflex symptoms, and that it is possibly even a congenital condition."

Personally I thought I had reason to believe that congenital lateral displacements were not uncommon; that they gave me a great deal of annoyance and produced many an invalid. I know that ovaries have been removed which were thought to be the seat of the disease, while I had diagnosticated the case as one of congenital lateral displacement. As I surmised, the operation did not improve the patient. I have collected from my last year's office case-book all cases of lateral displacements, except such as came with large tumors. There were five hundred cases from which the deductions were made, representing my most mature experience and written with no intention of writing up a paper on this subject.

The result was as follows: 14.2 per cent. had lateral displacements. Of these lateral displacements 77.46 per cent. were married, 22.46 per cent. single; of the married ones 38.18 per cent. were sterile, 5.4 per cent. of all the married ones were married less than a year and were sterile; 63.38 per cent. of all cases had some sort of complication, and 57.77 per cent. of this number had some bearing on the lateral displacements—thus, there were among them cases of laceration of the cervix, chronic salpingo-ovaritis, subinvolution, and early pregnancies. There were thus 36.62 per cent. of the whole number without any apparent cause except a shortened broad or round ligament. Only 26.76 per cent. thought that their suffering began from some certain event; the most frequent was parturition. Thirty-eight per cent. were displaced to the right and 62 per cent. to the left. Of all the cases 38 per cent. complained of much pain in the left iliac region—in fact, it was their chief complaint; 28.16 per cent. complained of pain in the right iliac region, and it was their chief complaint.

Of all the cases where there was a left lateral displacement, 40.90 per cent. complained of pain in the left iliac fossa; of all cases where there was a right lateral displacement, 37.03 per cent. complained of pain in the right iliac fossa; 12.67 per cent. complained of pain in both iliacs; 22.53 per cent. complained of other symptoms, with or without the above pain, such as sterility, general pelvic pain, increased by walking. Of all the cases 70.42 per cent. were regular about their menstrual period; 26.76 per cent. were irregular, either too often, or not often enough; 1.40 per cent. were either

pregnant or had reached the menopause; 52.25 per cent. had a normal amount of flow, 15.49 per cent. had a subnormal amount of flow, 18.4 per cent. had a large flow, and 11.26 a very excessive flow. I want to draw your attention very especially to the fact that in fifteen out of these seventy-one cases, or 21.12 per cent., the principal pain was referred to the iliac region opposite to the side toward which the uterus was displaced.

Eighty-six and sixty-six hundredths per cent. of all of these cases were regular about their monthly period; 17.16 per cent. were irregular and pregnant each; 40 per cent. suffered with a large flow, 33.33 per cent. had a normal flow as to the amount, and in 20 per cent. the flow was very small; in 7.66 per cent. the flow was absent on account of pregnancy; in 13.33 per cent. the flow was painful throughout the whole period, in 46.66 per cent. the flow was painful on the first day or two, in 40 per cent. there was no pain or only a slight pain recorded; 6.66 per cent. had pain one day before the flow; 33.33 per cent. of the cases were single, with an average age of 24.20 years, while their suffering had lasted 5.60 years, showing a very early period of suffering—in fact, two-thirds of the cases began to suffer with the onset of their menstrual period.

A perusal of their histories shows that they are indeed great sufferers. Several have been in many hands and have been little benefited by any treatment. It is, in fact, this form of complaint that has suggested to me the study presented to you today. I know of no cases in their severer forms, excepting malignant diseases, more annoying, and none where less benefit is derived from almost any form of treatment. I have reason to believe that many of the so-called pelvic neuralgias are due to this condition. They are what I would call the congenital cases of lateral displacement. In none was there any history of inflammatory trouble in the broad ligaments. The disease was eminently insidious.

There is the other form of lateral displacement, where the pain is referred to the shorter ligament, which I think is less apt to be congenital, since there was nearly always a cause, such as peritonitis, gonorrhea, puerperal fever, an abortion, a fall, and not infrequently marriage was assigned as a cause. In such cases, where no cause could be assigned, it was found that the disease had not lasted for many years and was evidently acquired. Of course it is

possible that the malposition originally gave no cause for complaint, and that some unknown incident became a factor in producing symptoms. These cases will respond to treatment more readily than the set spoken of before, sometimes by ordinary local treatment, as would be suggested by the cause, at times by the gradual breaking up of adhesions, and often by operative interference.

There can be no doubt that cases of both categories occur where no symptoms at all are produced.

The history of a congenital case is usually what is described in the following:

Case I.—Miss B., aged twenty-six years, of a nervous family, and a member of the so-called better class, was seen in consultation at Morristown on March 25, 1895. She was the picture of a hysterical and cynical woman, and her face seemed to say, "Can you find out what is wrong? Nobody has benefited me as yet." She looked well in the face, except for such paleness as is constant in those who lead an indoor life, and of fair intelligence. The impression of the first moment was that she simulated disease. But as her history was developed I soon recognized how very sick a woman she was. She had suffered to a slight extent with pain in the right iliac region during the earlier days of her menstrual life. She began menstruating at the age of fourteen years and was always regular. After a year or two she gave up schooling, on account of her inability to attend regularly and the pain which affected her right side so much.

Her menstrual period became more painful, but in quantity remained the same. At times there was some leucorrheal discharge. About this time she also found that she was no longer able to partake of the outdoor sports of the young, and that the carriage or the couch was her favored place. She spent her whole menstrual period in bed. More than half of the last two years were spent in the private sanatorium of one of our most excellent surgeons and teachers. There she was treated by dilatation, pessary (stem and otherwise), with the result that she became no better, but continued on her down-hill path. I say this with no spirit of fault-finding, for I know that no one could have done more for her.

During the last three years she had been in bed about constantly, and during this time had taken her meals at the family table very rarely.

She complained of constant pain in the *right iliac fossa,* which of late years had traveled to the left side and the back. The upright position was absolutely unbearable, with pain in the right iliac. She also complained of much vertex and occipital pain.

A physical examination revealed the uterus slightly enlarged, displaced far to the left, and very sensitive to pressure.

The right broad ligament was sensitive, especially when the uterus was dragged to the left, this increasing the tension of the ligament.

Ovaries and tubes were indistinctly felt, owing to the rigidity of the abdominal walls. Otherwise the patient appeared healthy, excepting some slight digestive disturbances.

When such a woman becomes a wife and mother my experience would show that she improved, but if she remained sterile her agonies would be unbearable.

The following was such a case :

CASE II.—Mrs. E. was first seen by me eight years ago, when a young girl, for excessive pain in the right iliac region and a very painful, profuse, and long-continued menstrual flow, which was gradually getting worse and had been coming since the first menstruation. This kept her in her room and her bed for the greater part of the month. Being a woman in the fashionable world, and fond of society, this difficulty was a source of great worry and anxiety to herself and the family—more so as the patient was an energetic woman and felt herself gradually going toward invalidism. She had been in various hands with little benefit.

A physical examination showed a slightly enlarged uterus, very much displaced to the left side. Ovaries and tubes were normal. The endometrium bled on slight touch. Curettage and dilatation improved her excessive menstrual flow and pain for several years. The pain in the right iliac continued unabated. In a few years she again became worse, and a second operation followed with some relief. She was seen in consultation by a prominent New York gynecologist, who advised castration and would not recognize the lateral deviation as a cause. I had counseled against such a measure before, and the lady remained in her former condition. While on a visit to Philadelphia she wrote to me for a letter of introduction to a gentleman of high standing and a member of this Association. He told her there was nothing wrong and she had better be married.

Before that she had refused marriage, since I had told her she would probably be much worse unless she became a mother. Nearly two years ago she was married, remained sterile, and is now almost a bed-ridden invalid.

Case III.—The following case is the history of one where the result of marriage was highly satisfactory.

Mrs. D. was seen in March, 1889, complaining of severe pain in the left iliac fossa, which hardly enabled her to be about.

She came from a healthy family and attended school until seventeen. At fifteen she first became unwell at regular intervals, with but slight pain. Gradually the pain increased; she soon began to have severe pain in the left iliac region, increased by walking or standing. At nineteen she was married. This was six months before I saw her. The uterus was enlarged and close to the right side of the pelvis and hardly movable. She was pregnant three months, and during this time the pain became much worse. After the fifth month the pain almost ceased. Some months after the birth of the child the pain returned to a slighter degree than she had formerly suffered. During the next three years she gave birth to two more children, the pain becoming less with each pregnancy. Her youngest child is now two years old, and all her children are in perfect health. She considers herself a well woman, though she is still reminded of her ailment when exercising severely.

The non-operative treatment of this form of disease is for the most part very unsatisfactory. I consider the pain in the longer ligament to be due to the extra tension upon this organ when the patient is in the upright position, thus generally setting up a neuralgia. This is at the outset a mechanical condition, and anything to relieve this tension would fulfil the indications. For that reason I push a dry oakum tampon between the cervix and iliac on the side of the shorter ligament, keeping it in place by a second or third one, all of which will also elevate the uterus. This should be retained for forty-eight hours. A hot douche with the patient on her knees and elbows, twice daily, is ordered after the removal of the tampon. This will often relieve much of the distress in the milder cases. At times a small Albert Smith pessary, with a notch on the side of the shorter ligament, will supplant this treatment. Pessaries of other forms at times give some relief. Of course, all constricting cloths around the waist should be removed, and, if the

patient is at all corpulent, an abdominal support ordered. I believe if there were any operative means to lengthen the shortened ligament the patient would get well. This is well demonstrated by the fact that these patients get well when they have undergone several successive pregnancies. I have no such means to offer. Whether a shortening of the longer ligament or a ventrofixation would afford any relief I am unable to say.

In two very extreme cases I have resorted to an abdominal section, removing the uterus, tubes, ovaries, and the broad ligaments. I was especially careful to remove the broad ligaments close to the sides of the pelvis. It might be of interest to relate the older case of the two.

Case IV.—Miss M., aged thirty-five years, was seen on August 7, 1891. At this time she complained of much and constant pain in the right iliac fossa, with excessive and painful menstrual flow. She had gradually learned, by a combination of cushions placed under the right hip and the iliac region, to be comfortable in bed. When sitting on a chair she was obliged to raise the right leg by keeping the foot on a hassock. For three years she had been unable to leave the second floor of the house except on rare occasions, and for six years had not been at the family dinner-table. She favored the right side to such an extent that when she was placed on a table for purpose of examination there was noticed a most marked atrophy of the muscles of the right buttock and thigh.

She began to menstruate at about fifteen years and with little difficulty, but soon began to complain of pain in the right iliac. At twenty she was taken with typhoid fever, which made her complaint worse and added profuse and painful menstruation. The pain was especially severe on the fourth day. The bed was her refuge now for the week of the flow. All these symptoms became much worse when she took scarlet fever at the age of twenty-five years.

At the time of my first visit she was the picture of a chronic invalid, but, when talking on other subjects than her ailments, was a most intelligent and well-versed woman. The great loss of blood at her period accounted for her extraordinary paleness. At the time of menstruation she would occasionally suffer with retention of urine.

She had variously been treated for all sorts of ailments, and at

the time of my first visit wore a Graily Hewitt anteflexion pessary, which gave her some relief.

A physical examination showed the uterus in a normally anteverted position, but displaced far to the left. Her ovaries were small and somewhat sensitive. The tubes could not be made out. The endometrium was sensitive, spongy, and bled at the slightest touch.

For her excessive flow she was curetted, with the result of relief of pain and excessive loss of blood. Otherwise she remained as before.

For twenty-seven months she was treated with all the patience I could muster before I suggested the removal of the uterus, tubes, ovaries, and broad ligament. During this time she had undergone a second curettage for excessive flow. Being an intelligent woman, she understood how little I could promise her.

The operation was done by an abdominal section on April 17, 1894, so as to remove thoroughly both broad ligaments with uterus and ovaries. The following note was received from her on May 13, 1895, and will better explain her present condition than my own words: "The thought is constantly with me, and I think I never find myself equal to any new effort but the feeling of deep gratitude to God and to you, for the relief from pain and helplessness that has come to me through your great skill and kindness is with me. I can only say that if I could know that I had brought such measure of relief to any one human being as you have afforded me I should feel it had been worth living for," etc.

Of course she is not robust, but has become the housekeeper of her home now. While she can exercise about the house at will, she is not able as yet to walk any great distance on the streets, on account of pain it produces in the vagina.

A second more recent case, done in December, 1894, is also doing well. She is a Sister of Charity and a teacher, and is taking up her work again at the present time after being an invalid for several years.

I am sorry that I had nothing better to offer for these two cases than extirpation, and I hope that it will not be made a precedent for wholesale operation, but that a more thorough knowledge may be gained of this peculiar displacement and with it a conservative remedy.

Bibliography.

1. American System of Gynecology, 1888.
2. *Pozzi, S.:* Lehrbuch der klinischen und operativen Gynäkologie, 1892.
3. *Schröder:* Krankheiten der weiblichen Geschlechtsorgane, 1890.
4. *Martin, A.:* Pathologie und Therapie der Frauenkrankheiten, 1893.
5. *Goodell, W.:* Lessons in Gynecology, 1887.
6. *Fehling, H.:* Lehrbuch der Frauenkrankheiten, 1893.
7. *Mundé, P. F.:* Minor Surgical Gynecology, 1880.
8. *Emmet, T. A.:* The Principles and Practice of Gynecology, 1884.
9. *Hart* and *Barbour:* Manual of Gynecology, 1886.
10. *Von Scanzoni, F. W.:* Lehrbuch der Krankheiten der weiblichen Sexualorgane.
11. *Thomas, T. G.:* A Practical Treatise on Diseases of Women, 1874.
12. The American Obstetrical and Gynecological Journal, vol. vi., No. 6.
13. *Frommel:* Jahresbericht über Fortschritte auf den Gebiete der Gynäkologie und Geburtshülfe, 1894.
14. *Tait, Lawson:* Diseases of Women and Abdominal Surgery, vol. i., 1889.
15. *Reinstädter, A.:* Praktische Grundzuge der Gynäkologie, 1892.
16. *Schultze, B. S.:* The Pathology and Treatment of Displacement of the Uterus, 1888.
17. *Mundé, P. F.:* A Clinical Lecture delivered at the New York Polyclinic. International Clinics, vol. iv., 1893.
18. *Schultze, B. S.:* Ueber die Lageveränderung der Gebärmutter. Sammlung klinischer Vorträge, No. 50.

DISCUSSION.

Dr. H. W. Longyear, of Detroit.—Mr. President: Dr. Ill is to be congratulated in bringing this subject before the Association. This matter of lateral displacement of the uterus without great physical deformity, or without any other physical deformity to be discovered in the pelvis, is certainly quite common, and the etiology and treatment are often very perplexing. The treatment is often varied, and in a great many cases not followed by good results. With regard to the removal of those ovaries that are not apparently diseased, it seems to me it should not be done unless there is palpable disease, and yet in those cases Dr. Ill cites the symptoms alone are the indications. We should discountenance the removal of these organs for symptoms without physical signs, and yet there may be exceptions, and possibly those exceptions are the cases reported. However, I cannot but feel that we should be very wary about advising an operation of this magnitude without physical evidence of its necessity. *Obscure symptoms, without other evidence of ovarian disease, are rarely if ever relieved by oöphrectomy.*

SOME OF THE ADVANTAGES OF, AND INDICATIONS FOR, VAGINAL HYSTERO-SALPINGO-OÖPHORECTOMY IN SUPPURATIVE PELVIC DISEASE.

By X. O. WERDER, M.D.,
PITTSBURG.

The operative results in suppurative diseases of the pelvis, in the hands of the abdominal surgeon, form one of the proudest chapters in modern surgery. The mortality of these operations has been so steadily reduced and has reached such a low point that it would seem that perfection had almost been reached were it not for the fact that recovery from the operation is not always synonymous with complete restoration to health. In other words, in many cases the symptoms complained of prior to the operation persist subsequently to a greater or less degree, or post-operative complications and sequelæ mar the benefits actually obtained by the surgical treatment. Schauta, who made a careful study of his cases subsequent to operation, finds that about 80 per cent. of them were completely relieved of their symptoms; Chrobak obtained only 50 per cent. of cures, while Landau estimates that 60 to 70 per cent. of his cases were permanently benefited. While time will no doubt add to this list of cures a number of cases suffering from vasomotor disturbances (which are a direct physiological result of the ablation of the appendages, and which in the course of a few years will subside, restoring the patient to perfect health), there unquestionably remain many in whom the benefits of operation are marred by complications and sequelæ which persist to a greater or less degree to torment these poor patients. Every operator counts among his many successes a few such sad failures. While a more careful technique and a more thorough operation have unquestionably lessened the number of these cases very materially, they have not entirely eliminated them.

The study of the causes of these failures is a deeply interesting topic to every operator. Unfortunately, the problem is still unsolved, though many of the causes leading to failure are quite well understood and avoided. I will allude to only two of these, and will classify them, for the sake of convenience, into *operative* and *inherent*.

By the *operative* I understand those complications and sequelæ directly attributable to the method of treatment—for example, hernia, intestinal and omental adhesions to the abdominal cicatrix, abdominal sinuses and fistulæ due to extraneous infection at the time of operation, and the like.

Inherent refers to those complications and sequelæ which result from conditions existing in the patient at the time of operation, but which the operator failed to remove. They therefore continue to act as a source of disturbance and irritation to the patient. Unquestionably the most prominent among these are foci of infection left behind in adhesions, ligatured pedicles, silk infected by contact with septic pus, and, last but not least, a septic uterus. To be a little more specific, let us recall the fact that we are frequently dealing with very septic pus, containing virulent pathogenic micro-organisms, such as streptococci, staphylococci, bacilli coli communes, tubercle bacilli, and many other varieties, which, in spite of our most painstaking asepsis, flushing, sponging, and careful drainage, will produce local infection in the abdominal wound, ligatures, or sutures, and will result in inflammation, suppuration, and adhesions. Even if we succeed in destroying the most apparent of these septic agents by a careful removal of the diseased appendages, we do not always remove the source of infection. We leave in the pedicles, in the sutures, and in the lymphatic system surrounding the uterus micro-organisms which continue to give rise to new disturbances. How else will you explain those cases which have gone home apparently well, but return to you weeks or months later with the old or similar complaints, and which on examination present distinctly a mass of exudate around the ligatured pedicle on one or both sides of the pelvis?

It was this fact, probably more than any other, which induced Péan and his followers to regard the uterus as the main source of infection and to practise uterine castration. Ségond went so far as to say that it was better for the patient to have her uterus extir-

pated and her diseased adnexa left than *vice versa*. It is undoubtedly true that the uterus is usually the organ first invaded by infection, and that from there it extends to the peritoneum through the tubal orifices and lymphatics. That the uterus succeeds in throwing off these pathogenic micro-organisms at times, or that they may lose their virulence in the course of time and that the atrophic changes following ablation of the appendages may to some extent inhibit their growth, can be admitted; but that this is the rule we have strong reason to doubt. On the contrary, there is convincing proof that they establish a more or less permanent habitat, not only in the mucosa, but also in the muscles and in the connective tissue surrounding the uterus. To remove the adnexa without the uterus, then, means to leave an organ without function and without use, but containing elements capable of inciting disturbance and disease. Hysterectomy with salpingo-oöphorectomy in suppurative disease of the pelvis not only allows us to remove the nidus of infection more completely, thus being nearer an ideal operation, but it gives the patient the very best chance for complete recovery without adding any increased risk to the operation, for the mortality, in the hands of such men as Péan, Richelot, Landau, Leopold, and in our own country Krug, Baldy, Polk, Boldt, Sutton, and others, compares very favorably with that of salpingo-oöphorectomy alone. Hystero-salpingo-oöphorectomy is unquestionably the operation of the future—whether vaginal or abdominal still remains *sub judice*.

The vaginal method, practised almost exclusively by the French and many German surgeons, has many features to recommend it. It precludes the possibility of ventral hernia and intestinal and omental adhesions to the line of incision. It is generally admitted to be followed by less shock, because of the minimum exposure of the peritoneum during the operation and absence of manipulation of the abdominal viscera. In suppurative disease of the pelvis the intestines are frequently agglutinated into a mass, forming a protecting roof above the infected pelvis and a natural and efficient barrier against infection of the peritoneal cavity. In the vaginal method this is left undisturbed. The operation is thus made practically extraperitoneal, while in the abdominal method this barrier (which has such an important rôle) has to be broken through before the actual seat of disease can be reached, thus exposing the

softened intestines, which are often friable, to the risk of injury during the necessary manipulations, and exposing the peritoneal cavity to the danger of contamination from septic pus set free by the rupture of abscess-cavities. Drainage per vaginam is the best possible. Removing the uterus is like knocking the bottom out of a basin, so far as drainage is concerned. Convalescence is more rapid and recovery more complete. My experience has been that the patients are able to leave their beds in from a week to ten days. This operation leaves no sutures and ligatures, and does away with the danger of mural abscesses, sinuses, and fistulæ.

The objection to vaginal hystero-salpingo-oöphorectomy most frequently raised—that the operator has to work in the dark—can only come from those who have not had an opportunity of seeing the operation properly done, for in the majority of cases the judicious use of retractors and the close observance of a good technique give the operator just as good a view of the field of operation as he has in the abdominal method even when employing the Trendelenburg position. Intestinal adhesions can usually be separated with equal ease.

That a very narrow vagina, partly obstructed by a number of clamps, may present very great difficulties in the enucleation of firmly adherent adnexa cannot be denied, but with patience and the experience previously gained in abdominal operations in such cases (and this is invaluable in the vaginal method) failures should be rare. In only two of the cases reported in this paper were fragments of the ovaries left, because they were so friable and soft that they had to be removed in shreds. In the abdominal operation the same might occur in similar cases. In exceptional cases an incision through the pelvic floor, as practised by Dührssen, will give abundant room for the necessary manipulations. That injuries to the rectum, bladder, and ureters are common in vaginal hysterectomies is a theoretical conclusion not borne out by facts. On the contrary, the ureters at least have been damaged during abdominal hysterectomies more frequently than in the vaginal method. In my own experience there have been no such injuries to these organs.

Indications for Vaginal Hystero-salpingo-oöphorectomy. This operation is indicated in all cases of bilateral disease of the adnexa which require the removal of both ovaries and tubes, but whenever

there is the slightest possibility of conservative treatment the uterus should under no circumstances be sacrificed. Since December of last year, at which time I began doing vaginal hysterectomies for suppurative and inflammatory diseases of the appendages, I have followed this rule with very few exceptions. Among forty cases of this character I performed abdominal section fifteen times with the ablation of one or both adnexa, and vaginal hystero-salpingo-oöphorectomy twenty-five times—eighteen times for puriform disease. Among the latter there have been no deaths. In only one case I decided against vaginal hysterectomy because of the difficulty I expected to encounter by this method. It was unmistakably a case of serious lesion of both adnexa, in which the symptoms pointed to partial intestinal obstruction and in which laxatives gave rise to violent colicky pains and visible peristaltic contractions. I performed abdominal section in order to be better able to deal with the intestinal adhesions, which seemed to extend as high up as the umbilicus. On section the intestines were found matted together and adherent at the anterior abdominal wall. A separation of this intestinal mass seemed an almost impossible task, but with great difficulty the pelvis was finally reached and the diseased adnexa removed *with* the uterus. The pathological condition was a tuberculosis, primarily of the appendages, but involving the uterus, omentum, portions of the intestines and peritoneum. The patient made a good recovery, and is now, more than six months after the operation, a picture of health.

In addition to this general indication there are some special conditions in which vaginal hysterectomy seems to me to possess some superior advantages over abdominal section. In cases in which the pelvis contains active pathogenic micro-organisms the disease-foci can removed with less danger of infecting the peritoneum and with less fear of post-operative complications. There is, unfortunately, no bacteriological guide to these cases, but I believe that clinically such cases can be recognized with some degree of certainty. They are those cases that have had recent and frequent severe attacks of pelvic peritonitis. Another class of cases, in which, in my opinion, uterine castration especially, with simple evacuation of the pus cavities, is indicated, are patients even now met with in general hospitals, with general hectic symptoms, greatly exhausted, septic,

bedridden, and emaciated to skeletons. My experience has demonstrated to my own full satisfaction that cases in such a pitiable condition rarely survive the shock of an abdominal section. I believe that if we incise Douglas's pouch and freely open all pus-sacs, or, when this cannot be done in this manner, remove the uterus and simply open and drain the abscess-cavities, we will frequently have the gratification of having saved a human life. Vaginal hysterectomy is the operation *par excellence* in cases in which abdominal section has been followed by long-persisting sinuses and fistulæ caused by incomplete operations, septic ligatures, etc., and in which a secondary operation is indicated to bring about a cure. Laparatomy in such conditions is not only extremely difficult at times on account of the numerous and firm intestinal adhesions, but also dangerous on account of the difficulty of doing an aseptic operation. Vaginal hysterectomy removes the septic foci and provides abundant drainage without disturbing the adherent abdominal viscera and infecting the peritoneal cavity. No. 6 on my list was such a case. About a year previously abdominal section was done and a pus-tube enucleated. The adhesions about the other tube and ovary were broken up, but its removal was not permitted. The patient never fully recovered from the operation. Attacks of peritonitis, with numerous fistulous openings through the abdominal wound, kept her confined to her bed almost continuously during the whole year and reduced her very much. She finally consented to a radical operation, which was performed per vaginam. The operation proved to be very difficult, the fundus of the uterus being cemented in masses of adhesions, but the patient made a good recovery and has enjoyed good health since. In another case (No. 4 on my list) the abdomen had been opened twice, by two different surgeons, for the purpose of removing diseased appendages, but both times unsuccessfully on account of their inability to separate the very firm adhesions. The last attempt was followed by extensive suppuration of the abdominal wound, confining the patient to bed for over six weeks. Since the last operation the patient was a confirmed invalid. The pelvis was filled with large masses on both sides of the uterus. Though the patient had a very small vagina, hystero-salpingo-oöphorectomy was successfully performed. From this operation the patient made a good recovery.

Table of Cases.

No.	Age	No. of children.	No. of miscarriages	Diagnosis.	Operation.	Date.	Pathological condition.	Result.	Remarks.
1	37	Seven	None	Septic endometritis, bilateral pyosalpinx.	Vaginal hystero-salpingo-oöphorectomy.	Dec. 1894	Abscess at right cornu of uterus; one ounce pus; tubes friable and contained pus; ovaries friable.	Recovery.	Pus was discharged freely through vagina from uterus and tubes; no symptoms of infection of peritoneal cavity.
2	33	None	One	Bilateral pyosalpinx.	" " "	Dec. 28, 1894	Tubes contained pus.	"	
3	31	Five	One	" "	" " "	Jan. 2, 1895	Uterus large and soft; tubes contained pus.	"	Uterus perforated during preliminary curetting; pus poured from vagina as each tube was removed.
4	19	.....	.....	Abscess of left ovary and tube.	" " "	Mar. 15, 1895	Cyst of right ovary; abscess of left ovary and tube; intestines adherent to uterus and to each other. Two abdominal sections had been done by other surgeons, but nothing could be removed, and wound closed.	"	During operation cystic fluid and pus flowed freely through vagina; field thoroughly washed and operation proceeded with; wall of intestines forming roof to pelvis not disturbed.
5	22	None	None	Endometritis, pyosalpinx.	" " "	April, 1895	Uterus enlarged, adherent; tubes contained pus.	"	Profuse bleeding; uterus turned out backward.
6	28	One	None	Degeneration of left tube and ovary.	" " "	Mar. 19, 1895	Vagina very small; uterus bound firmly to bladder and fixed in a mass of adhesions.	"	
7	26	None	None	Bilateral pyosalpinx.	" " "	Mar. 30, 1895	Pus-tubes.	"	Pus poured from vagina as adnexa were removed.
8	...	Three	None	Perineal tear (complete), metritis, oöphoritis.	" " "	Apr. 6, 1895	Uterus enlarged; small interstitial fibroids; tubes contained blood and pus; ovaries diseased.	"	Quite bloody, but bleeding points secured. In sponging a piece of gauze was lost in cavity, but gave rise to no bad results.
9	34	Four	Three	Metritis, salpingitis.	" " "	Apr. 13, 1895	Friable uterus; adherent pus-tubes.	"	Friable uterus caused trouble in its removal; adherent tubes a little hard to get at.

10	30	One	None	Uterus enlarged and retroflexed; pyosalpinx.	Vaginal hystero-salpingo-oöphorectomy.			May 16, 1895	Friable uterus; pus-tubes.	Recovery.	
11	36	Seven	None	Endometritis, pyosalpinx.	"	"	"	May 26, 1895	Pus-tubes.	"	Removed by morcellement.
12	39	None	Six	Bilateral pyosalpinx.	"	"	"	May, 1895	*Uterus*—adherent to intestines; small fibroid at fundus. *Adnexa*—pus in both tubes, three ounces in left.	"	Removed by morcellement.
13	37	Four	One	Endometritis, salpingitis.	"	"	"	July, 1895	Uterus very friable; tubes thickened and contained pus; ovaries degenerated.	"	Removed by morcellement.
14	25	None	None	Retroversion, endometritis, salpingitis.	"	"	"	July 9, 1895	Left tube contained pus; right ovary and tube firmly adherent.	"	Uterus removed by morcellement.
15	42	Five	One	Retroflexion, endometritis, bilateral pyosalpinx.	"	"	"	Sept. 9, 1895	Pus-tubes; very firm adhesions; mass behind uterus.	Doing well.[1]	Cervix amputated, uterus split to fundus and morcellated; pus escaped as left tube was being removed; mass three-quarters by one and one-half inches removed from behind the uterus; clump of adherent intestines formed wall between pelvic and abdominal cavities.
16	34	Five	One	Retroflexion with adhesions, endometritis, bilateral pyosalpinx.	"	"	"	Sept 12, 1895	Pus-tubes; very firm adhesions about internal os, at which point uterus was as hard as cartilage.	" [1]	Adhesions so firm as to require use of scissors in separating uterus from rectum.
17	23	One	None	Endometritis, bilateral pyosalpinx.	"	"	"	Sept. 14, 1895	Pus-tubes.	" [1]	Pus escaped as right tube was being removed.
18	30 (?)	Two	None	Rectocele, cystocele, lacerated cervix, bilateral pyosalpinx, small cyst of left ovary.	"	"	"	Sept. 14, 1895	Adhesions; pus-tubes; cyst of left ovary.	" [1]	Bladder firmly adherent, requiring use of scissors; behind uterus inflamed and adherent intestines formed a cavity that felt like that left by cancerous degeneration.

NOTE.—Since the above was written eight other pus cases have been operated upon by the same method, and have all made a good recovery, making in all twenty-six cases without a death or a complication.

[1] Has since fully recovered.

The technique adopted in these cases has been the multiple clamp method of Jacobs. In only two cases I employed a combination of Pratt's method with the clamp method. The cervix was freed from its vaginal attachments; the tissues, including the uterine artery, dissected away from the uterus, until the peritoneal cavity was opened in front and behind the uterus. The cervix and the lower portion of the uterus, thus bared of surrounding tissue, were then amputated. The fundus was split into halves, which were trimmed until a mere strip of uterine tissue was left alongside of the broad ligaments, enough being left, however, to afford a secure hold for a volsella forceps with which to make firm traction on the adnexa. After freeing these from their adhesions a clamp was applied to the remaining broad ligament external to the adnexa, and the latter cut away. In both cases the result was all that could be desired. The advantages of this method are that it leaves only two clamps in the vagina after the operation is completed, that the vagina remains unobstructed for the necessary manipulations, and that it does not interfere with the drainage of the pelvic cavity. In a third case in which I attempted this method the uterus was so extremely soft and friable that in stripping back the tissues from the uterus the latter was perforated in numerous places, so that the multiple clamp method had to be resorted to. My experience with this operation has, therefore, not been sufficient to warrant an opinion, but if hemorrhage can be avoided with the same certainty as by the clamps, it is undoubtedly much superior to the multiple clamp method.

In conclusion, let me say that probably in no other operation is it so indispensable to be provided with a good instrumentarium. It is particularly important to have a number of good, reliable clamps and volsella forceps. In this class of cases you are not dealing, as a rule, with a freely movable uterus which by a little traction can be brought before the vulva, as in the cases requiring hysterectomy for malignant disease; on the contrary, the uterus is frequently imbedded in a mass of adhesions, from which it can be removed only by a tedious and often difficult process of morcellation. Without special and carefully made instruments the operator would not only have his patience and coolness put to a very severe test, but would find the operation an almost impossible task.

DISCUSSION.

The President.—This is a very interesting subject. It is the greatest question today with abdominal and pelvic surgeons, and should be fully discussed in all its bearings. I wish everyone to participate in the discussion. There is no need of anyone being backward, whether he is a member or not. We want an expression of your views, and desire as large a number as possible to take part in this debate.

Dr. Joseph Eastman, of Indianapolis (by invitation).—I have been much interested in the paper of Dr. Werder, and I believe he has presented one of the most important questions of the day, in not only a practical light, but in a manner which will enable us to consider both sides fully. Some of you are aware that I have been an earnest advocate of vaginal hysterectomy for a number of years, and some of the gentlemen present, who have witnessed my operations will bear me out in saying that I have taken great pains to perfect instruments and methods for doing the operation, so that it may be made simple and successful. I fully agree with the gentleman when he says that a full equipment of instruments is necessary. I have gone further than some, and in my last one hundred operations I have insisted on operating in the Sims position. In so doing I get the same advantages that we get in the Trendelenburg position—floating away of intestines, omentum, and bladder, and the pubic bone is out of sight. Those who have seen me operate know that I do much better work than can be done with the patient in the dorsal position. I make that statement to show that I am not opposed to vaginal hysterectomy, but I want to emphatically enter my protest against the extreme to which vaginal hysterectomy is being carried. There are cases where the removal of the appendages can be effected through the vagina, through the posterior *cul-de-sac*.

Removal of pus-tubes can thus be accomplished, and yet leave the uterus. When the uterus is not much diseased, I believe with Dr. Johnstone, of Cincinnati, that it can be treated and the patient restored, and even though the appendages have been removed, a very important organ is left. There is no need of removing everything in the pelvis. The uterus is an important organ, and those, including myself, who have made inquiries of patients have reached the conclusion that the pleasurable sensation during coitus is partially due to the uterus. A woman who has had her uterus removed has only half of the pleasurable sensation incidental to sexual intercourse. I simply wish to state

that I protest against the extremes to which this operation is being carried. The pendulum of surgical progression has swung too far, because in many cases we can do better work by abdominal than by vaginal hysterectomy. I fully agree with Dr. Price in that regard, and those who follow him know that he gets excellent results. Without a halt is called removing the vagina at full length will be the next fad, the husband being granted no consideration whatever.

Dr. L. S. McMurtry, of Louisville, Ky.—The question before the Association is of great importance, and I think the suggestion of the Chair is an excellent one—namely, that it should be thoroughly discussed. I propose to address the few remarks that I shall make to some of the claims that are being made for vaginal hysterectomy for the relief of inflammatory diseases of the pelvic organs in women. In the first place, we must take into consideration the fact that diseases of the pelvic organs in women comprise by far the largest class of diseases which come under the care of the gynecologist, requiring operative or non-operative treatment. They also furnish the greatest variety of lesions. We may meet simply a catarrhal inflammation of the endometrium which extends to the Fallopian tubes without suppuration, or there may be a suppurative process in the Fallopian tubes with pelvic peritonitis of varying degree; abscesses may rupture and spontaneous adhesions follow, and a variety of lesions that, so far as I recall at the present time, is not furnished in any other department that is dealt with by surgery.

In dealing with the various degrees of inflammatory disease, it is necessary to exercise judicious discrimination in the treatment of cases, whether by operation or not; and if by operation in determining with good, sound surgical judgment just how far the operative procedure shall extend. Many operations of exceeding value to the patient consist simply in liberating adhesions; others consist in removing the uterine appendages when they are diseased, or when their functions or integrity has been destroyed; even when they are disintegrated, undergoing progressive inflammatory changes, producing chronic recurrent attacks of inflammation, making an invalid of the woman or imperilling her life by acute attacks of a suppurative character. There may be systemic as well as local infection, and these cases must be decided by those principles in surgery that are applicable to inflammatory conditions of other organs, as well as the pelvic organs in women.

The principles of surgery are universal, and the process of inflammation is also universal in its general character, being qualified by the local influences that may obtain in various parts of the organism. So,

in the first place, I would ask how is it possible to decide beforehand such a serious step as this? I am sure, as I believe most of us are, that at the present time the operation of vaginal hysterectomy is being as much abused as was the operation of removal of the uterine appendages when it was first introduced to the profession. Pelvic surgery has suffered more in that respect than in any other one thing, that is, in having the ovaries and Fallopian tubes removed when they were not diseased to an extent that justified their removal. And so this great variety of lesions which we classify under the generic term of pelvic inflammation is treated by vaginal hysterectomy, with all the rashness and recklessness that characterized the removal of the appendages when Mr. Tait introduced his great discoveries in surgery to the profession. That is my first point—namely, there is not sufficient discretion being used in applying this operation.

Yesterday, in bringing before the Association the subject of indications for operation in puerperal sepsis, I had occasion to advocate the application of hysterectomy in cases of diffuse parenchymatous inflammation of the uterus, to septic deposits of pus in the uterus—and I now beg to repeat that I do not suppose there is a surgeon present who will deny that there are post-puerperal conditions of suppurative inflammation, where it becomes necessary to secure the consent of the patient to remove the uterus. Hysterectomy is a proper operation in certain cases of inflammatory disease of the pelvic organs. In applying such a principle in any other department of surgery, not alone in pelvic surgery, if you have to remove the uterine appendages for extensive disease you take away the uterus because it is no longer capable of performing its functions. All of you will admit that it is not sound surgery to remove an organ which is not seriously diseased, merely because of the application of that principle.

What is there in surgery more satisfactory than the established operations of the present day in regard to pelvic inflammation? Take, for example, an abdominal section that is done neatly and cleanly, and with that finished method that operations upon the eye are done—operations that are not done in a careless, indifferent fashion—and what is more satisfactory? With a two-and-a-half-inch incision you can introduce your finger, sweep it over the entire field, have access to the organs, and separate the adhesions, thus making an exploratory procedure connected with every operation as its initial step. What operation in surgery has yielded more brilliant results when skilfully applied? What women are more satisfied than those whom you have treated for inflammatory disease of the uterine appendages by abdominal section?

What is claimed for the vaginal operation? That patients sit up in two weeks. That is an unimportant factor in the case. It is claimed that they get well very quickly. But what is the condition of the pelvis after the uterus has been removed? In those cases where there are extensive adhesions, we do not know about the numerous pockets we may have left behind which, after the woman is apparently well, produce recurrent attacks of inflammation requiring surgical interference.

Dr. Sherwood Dunn, of Los Angeles, Cal.—You will excuse me for any timidity that I may exhibit in the demonstration I desire to give you in regard to the technique and various steps of the operation for vaginal hysterectomy as it is practised by Professor Gustave Richelot, of Paris, who, by the eminent surgeons of Europe, is acknowledged at the present time to be the king of hysterectomists. Professor Richelot probably gives to us a *résumé* of results in this operation that surpasses all results in capital surgery. From February 1, 1894, to May 1, 1895, he told me in the presence of Professor Cushing, of San Francisco, whom I had the honor and pleasure of conducting to his clinic, that he had performed one hundred and forty-four vaginal hysterectomies, as they came to him for non-malignant diseases, without the loss of one patient. When I first entered the hospital service in Paris, with the natural conservatism that marks American thought and American procedures, I was constitutionally and absolutely opposed to vaginal hysterectomy. It appeared to me a brutal and inhumane manipulation of those organs that are Divinely destined to propagate the human race, and I could not reconcile either my mental or moral mode of thought to this operation. My prejudices were aided and nursed by being attached to one of the most celebrated laparatomists in Europe.

Professor Pozzi is justly celebrated as being a laparatomist of the first order. He will manipulate the pelvic organs and extirpate pus-tubes through a smaller abdominal incision than any other surgeon I know of. With this reputation I do not think it is unnatural that he should not be a partisan to hysterectomy by the vaginal route. It came within the province of my functions in his clinic to be delegated to conduct many of our visiting Americans to other clinics. In frequently visiting the clinics of that justly celebrated surgeon, Péan, who has invented more instruments and done more for the advancement of the science of surgery than any other living Frenchman; of Paul Ségond, who does a vaginal hysterectomy for fibroids, weighing as much as sixteen pounds, by the *morcellement* method; of Gustave Richelot, whom

I have been astonished beyond all measure to see do an uncomplicated vaginal hysterectomy in four and a half minutes from the time he put in his bistoury until he arose from his seat to leave his patient to the assistant; of Aubeau, who is not second to any of the known vaginal hysterectomists—and when I followed their cases, as I had the privilege of doing, and saw the remarkable results which followed the operation, I was slowly and unwillingly brought to the belief, that I at present possess, that vaginal hysterectomy is the coming operation in gynecological procedures. The man who practises laparatomy at the present time, and finds the uterus and its appendages bound down by a mass of purulent and septic material, is compelled to drain through the abdominal incision; whereas, from below, if he had done the same operation and had left the same amount of septic material in the abdominal cavity, he would have nature's route of natural drainage, and every time his patient coughs, vomits, or in any way brings the abdominal muscles into play forces the purulent detritus through this opening. It seems to me there are many conditions which are practically inoperable by abdominal section, and that we have the means, hope, and the promise of saving a patient's life if we will open through her vagina and take out such portions of these diseased organs and their septic surroundings as we may deem necessary, and it matters not how much we leave behind we have ten chances to one in our favor by vaginal drainage of having the septic material pass out of her system instead of into her system.

Professor Richelot has so simplified the steps and technique of this operation that vaginal hysterectomy is now to my mind one of the simplest of all procedures. I have seen him do more than one hundred hysterectomies, finding himself often in the presence of conditions un expected when he commenced his operation, but never have I found him in the presence of a condition that ever made him cease his operation, and I have seen him perform operations where it seemed that the women could not possibly recover. They were so anemic that you could almost see through their eyelids; they could not retain any sort of nourishment because of the feebleness of their nutritive proceeses; within a few hours after the operation I have seen their pulses reduced 20 and 30 beats, and their temperature fall 2° and 3°, and within three or four days these patients demand and retain solid food.

I will picture to you the steps of the Richelot operation for an uncomplicated hysterectomy. If you find yourselves in the presence of adhesions or poisonous materials with pus-tubes that fill in the whole

flank, you cannot expect this operation to meet with your entire approval. Every surgeon finds himself in the presence of new conditions every time he operates, and as a consequence he travels his own route and exercises his own ingenuity to overcome them. After first cleansing the vaginal tract, curetting the uterus, and protecting its internal surface by any antiseptic solution or injection you choose to use (he uses perchloride of iron), you seize the uterus, draw it down upon a wide posterior valve, that gives you as much space as possible. With a pair of curved scissors make a circular incision at the junction of or just below the vaginal insertion into the cervix. With the aid of the finger you press the tissues upward progressively until you have passed the insertion of the uterine artery. With the finger and thumb placed on each side of this organ you feel exactly its pulsations, and with a straight hemostatic forceps seize and compress this artery. You then liberate it by cutting between the forceps and uterus; do the same with the other side. Then proceed by aid of the finger to detach the tissues in front of the uterus, always remaining as near as possible to the body of the uterus so as to escape injury to the bladder in front until you arrive at and enter the peritoneal cavity. The assistant, who stands beside the patient, as fast as you lift up these tissues advances his retractor so that they shall not embarrass you, and the moment you enter the peritoneal cavity advances the anterior retractor and lifts up and protects the bladder from any possible accidental injury during the further steps of the operation. If you have not sufficient room to now antevert the uterus, amputate the cervix; but before doing this seize the portion above with tenaculum forceps so that it shall not recede from you. As soon as you have done this (we still have here a canal), introduce a forceps with six teeth, and split the uterus upward one-half inch in this way. Now place the forceps as high up as you can on each side of the incision, and forcibly draw the organ toward you; if you are still unable to antevert the body, increase or lengthen the incision to the fundus. It may be in one incision or it may be in several incisions, and section the uterus with straight scissors. With each incision advance the forceps upward on either side, and try to turn the uterus from above downward, bringing the fundus into the vagina and turning the amputated cervix into the peritoneal cavity. In measure as it resists this maneuvre continue your section and divide into two halves if necessary.

If there are any fibrous growths that make this manœuvre difficult turn the fundus the reverse way. When you have drawn the fundus into view, take another pair of hemostatic forceps, and, commencing

from above downward, apply them in this way (illustrating). And here is one of the capital points: the points of the forceps first applied and those you now apply should always pass each other in this manner (illustrating), so that the entire broad ligament is comprised in these two forceps; then section the entire part. If there are adhesions here you can search for the adnexa afterward. If they are free before placing the forceps, you can, by putting your fingers underneath, draw them into view, and apply the forceps behind them. You do the same on the other side. If you could see Professor Richelot or Professor Pozzi do this operation a few times, see them operate on the simple cases, and then do the complicated cases, that operation for you, as it was for me, would be robbed of its difficulties, would appear simple, and would recommend itself to you as being the simplest procedure in the world for the relief of certain conditions.

I would not for one moment be understood to advocate general hysterectomy. There is not a man among you who feels in the depth of his heart the full width and breadth of conservatism in this branch of our profession more than I do myself; but I try to the best of my ability and in the fulness of my power to free myself from prejudice. In Europe hysterectomy is performed in excess. I perfectly agree with my distinguished colleague from Louisville (Dr. McMurtry) that it is being performed too frequently. Vaginal hysterectomy, when it arrives at a point where it can assume and receive its proper place and its just consideration as a procedure for the relief of human suffering, will in many cases relieve abdominal surgery of much that is doubtful, and will take its place as a supreme measure, in my belief, for the relief of those diseases of the pelvic organs wherein the uterus and its adnexa are completely and fully engaged in the diseased processes, and will afford relief in those cases where abdominal section today fails.

This operation is done completely by the clamp method, and, with a few well-known exceptions, is the chosen mode of procedure in Europe. When the uterus is removed in a simple, uncomplicated case of this character, Professor Richelot leaves four forceps in position, but is never satisfied with them. He lifts up and spreads the edges of the broad ligament, and if he finds a point that bleeds a drop of blood he places an additional forceps on it; he also brings the borders of the inferior vaginal section and the peritoneum together by forceps placed close together from one side to the other until, when he introduces a piece of cotton and draws it over the cut surfaces, it is not red in color to inspection. He is mortally afraid of the least oozing, not

because he fears the patient is jeopardized by a possible hemorrhage, but, as he will say in every one of his clinics, "Gentlemen, the oozing of the least drop of blood in this situation furnishes a culture medium for the invasion of microbes, and if you wish to have these operations universally followed by good results, without septic infection, you must be exceedingly careful about the condition in which you leave your operation after you have finished it." He may have only four pairs of forceps on when he has concluded his operation, but before he has arrested every particle of hemorrhage I have seen him have twenty-two pairs of forceps applied. The vagina was so full of forceps that you could hardly see into it. Under ordinary circumstances you use half a dozen pairs of forceps, because along the posterior section of the vagina, as we all know, the parts always bleed profusely; sometimes it is necessary to place as many as from four to six pairs of forceps on the posterior inferior part of the vagina to completely arrest hemorrhage, and perhaps two more on each broad ligament. When the operation is completed you introduce the ends of two or three meshes of iodoform gauze that have been placed together into the peritoneal cavity beyond the section. To these three pieces of gauze you tie a piece of silk to recognize them in the future. Then with morsels of cotton, rolled into little balls with threads attached, previously covered with iodoform or iodoform gauze, pack the centre of the vaginal opening between the forceps clear down to the vulva. Then take your forceps in a bunch and introduce gauze all around the exterior in order that there shall be no erosion of the parts from the instruments.

In placing the patient in bed a long pillow or bolster is placed just below the thighs in order that those forceps which protrude shall lay upon the pillow, taking off all pressure from the parts. In that way the woman gets comfort. At the end of forty-eight hours the forceps are removed. In more than one hundred vaginal hysterectomies that I have seen between July 1st of last year and July 1st of this year, there was but one post-operative hemorrhage incidental to the removal of the instruments, and that was not the fault of the operator or of the instruments themselves, but the individual who was intrusted with the removal of the forceps. The patient bled profusely, but the hemorrhage was arrested with hemostatic forceps, which were allowed to remain in position forty-eight hours, at the end of which time they were removed, and the patient had no further trouble.

Dr. McMurtry.—What about drainage?

Dr. Dunn.—Two or three meshes of gauze are placed together and

their ends introduced into the peritoneal cavity. If there are pelvic adhesions, and some hemorrhage follows their separation which the operator has not been able to remove, then gauze is introduced as far as possible, and if at the end of a week the dressings have a fetid odor and the woman has elevation of temperature and acceleration of pulse, she is placed upon the table every morning and evening and the pockets are flushed with a warm solution of boric acid, and in some cases, if the discharge is purulent, with permanganate solution.

Dr. J. F. W. Ross, of Toronto.—Supposing you have a case with large pus-tubes and bound down by adhesions, such as we meet with in our ordinary work sometimes, with perforation of the bowel produced in two or three places, everything being matted together, how would you proceed then?

Dr. Dunn.—I have never seen a case in which we were unable to draw the uterus down far enough so as to reach it with instruments. Those cases, of course, are the most difficult to deal with, and they have minimum chances of recovery. By this route you have a natural one for drainage, and may fearlessly open these cavities. We will say that your pus-tube has perforated, or has so degenerated the walls of the bowel that within a day or two you have perforation. You notice at the morning dressing that the gauze has a fecal odor. Drainage by this route is constant, you can daily flush through this vaginal opening where you cannot through an abdominal one, and I have seen such cases several times. There is no procedure adopted to close this opening, but it is allowed to drain of its own accord and ultimately close. We all know that among intestinal fistulæ, even by the abdominal route, when we have fecal exudations for some time, if we leave them long enough they will close of their own accord. The same thing takes place by the vaginal route, and even more rapidly.

Dr. A. H. Cordier, of Kansas City.—I would ask Dr. Dunn how hemorrhage is controlled following the separation or breaking up of adhesions.

Dr. Dunn.—In case the adhesions are serious or extensive, and if you cannot break them down or separate them manually you allow them to rest; that is to say, you remove all but the adherent part and leave this in the hope that drainage and treatment below will terminate in final resolution. If you can bring that portion of the organ attached to the bowel forward, the bowel comes down. You have an open field before you, and by the aid of assistants you can see what you are doing. You cannot only feel the intestine as it comes down

toward you, but you see it frequently. It is not necessary to see tubes in an operation. Proceed as carefully as possible so as not to injure or rupture a pus-tube. If you bring the bowel down toward you with the adhesions, it is much more facile to separate it in that condition than it is in the abdomen, where you only feel it and cannot see it.

Dr. Cordier.—Is there any trouble from adhesions of the bowel itself, and where they are firm is it better to trust to nature?

Dr. Dunn.—If the adhesions are so firm that they cannot be separated manually without danger of rupture of the organ, then leave a portion even of the diseased uterus or diseased tubes attached to the intestine, and depend upon their drainage and post-operative treatment to cure the case.

Dr. Werder.—You did not explain, if I remember rightly, at what stage of the operation Douglas's pouch is opened.

Dr. Dunn.—When you make the incision around the cervix, it extends all the way around. It does not go into Douglas's pouch. The *cul-de-sac* is not touched. You separate the tissues to a point where they reach beyond the insertion of the artery, and as soon as this point is reached and you feel the pulsation of the artery you immediately clamp and section it. The lateral side of the uterus is left intact until this artery is cut. Then you separate the tissues from the uterus posteriorly and anteriorly by the introduction of a finger between these two sections.

A Member.—Do you remove the tubes and ovaries in every case?

Dr. Dunn.—You pay no attention to that whatever. If you can take away the adnexa do so, but if you cannot leave them if they be not purulent.

I wish, before closing, to apologize for my inability to think of the technical terms that are applied to the subject of which I have been speaking, because I confess to you that I am ignorant of them. I am not sufficiently familiar with English literature to use the technical terms with which you are all acquainted, and I ask your indulgence on this account. During the last ten years I have spoken scarcely anything but French.

Dr. W. G. Macdonald, of Albany, N. Y.—When you have double pyosalpinx associated with abscess on each side of the uterus, with fixation in the body so that it does not come down, when you do this operation for this condition by the vaginal route, how much of the uterus and the tubes and ovaries do you remove? Do you not really start and make an excavation of it, then pack with gauze and stop?

Dr. Dunn.—Exactly, if necessary.

Dr. Herman E. Hayd, of Buffalo.—Dr. Macdonald has raised a very important question. Dr. Werder believes that convalescence is materially shorter after vaginal hysterectomy than it is after abdominal hysterectomy. I would like to know the average convalescence in those cases where a great piece of ovarian abscess and probably three or four little foci up above are left.

Dr. Macdonald.—Given a case of old double pyosalpinx in which the tubes have extravasated into the broad ligaments and you have general adhesions everywhere, when you attach the vulsellum forceps to the cervix you cannot bring it down even one-quarter of an inch into the vagina, what does this operation mean? Does it not mean simply an excavation of the broad ligamentous tissue until you drain the abscess? It seems to me it is not a hysterectomy, but simply a partial one.

Dr. Dunn.—I am exceedingly glad Dr. Macdonald has brought this matter up. He could not put it more classically. I will augment the conditions that he places before us and with which you are familiar. If you have a uterus with a metritis, parametritis, and a parenchymatous degeneration, with all of the adnexa of that organ buried in a magma, and when you seize the uterus with tenaculum forceps you cannot draw it down the fraction of an inch, you have practically got to operate in a field that is dark. If you cannot illuminate the field of operation, you have got to be guided by tactile touch, by your experience, and not by the aid that the light can give you. I am free to say that when you take hold of a uterus in a vaginal hysterectomy and attempt to draw it toward you and you find you cannot do so, you will wish you had not seen the case. It is not the most pleasant situation by any means. But once you have the case in hand, you have got to do the best you know how, and in all the operations in which I have been interested I have not seen a surgeon commence an operation and quit it for some other one. When he started he finished that which he was going to do—vaginal hysterectomy in the conditions he had found. I want to ask you how you would deal with the conditions I have described by the abdominal route? I have seen one of the most celebrated surgeons in Europe make a section, find a condition of that kind, open up one of the sacs, insert a drainage-tube, and say he had had enough. On the evening of the next day he made an autopsy on the woman.

We all know that in the conditions we are speaking of the intestines, even to the peritoneum, are agglutinated, and nature steps in and raises there a barrier against the invasion of septic material to the organs that are above. What is more rational than, if you go through the vagina, to get out as much of that material as you can, in-

stitute drainage and wash out the cavity twice daily, you coax all of the septic material out. That being accomplished, the woman is left in the best physical condition. After pursuing this treatment, at the end of forty-eight hours I have seen the temperature fall three and four degrees, with a reduction of 20 or 30 beats in rapidity of the pulse, and within four days the woman would demand food. I have seen a good many of these patients die after laparatomy, and I have also seen a great many of them die after hysterectomy. But I am convinced, from my observations, that a hysterectomy will save twice as many lives as a laparatomy will.

Dr. J. H. Carstens, of Detroit.—What is the ultimate outcome of these patients in reference to relieving them of their condition, the nervous symptoms, etc.? When you leave part of a tube or part of an ovary behind, do the patients become perfectly well?

Dr. Dunn.—At the outset of my remarks I said that Professor Richelot had done in fifteen months a hundred and forty-four vaginal hysterectomies, exclusive of neoplasms, without a death. They comprised just such cases as we are talking about. It does not mean that every one of them was a case similar to the one I have demonstrated to you. It means cases where Professor Richelot could not remove the uterus and adnexa entire; where the organs are in a state of immobility —cases in which you cannot hope to do anything by the upper or abdominal route. We know that there are plenty of women who come to our clinics, unfortunately, who come also under our observation in private practice, but not so frequently, with all sorts of pains and backache. They cannot get out of a chair without some assistance. They have radiating pains down the thighs, that tells you they have tubal disease. We examine them carefully, and with the best intentions in the world, you discover diseased conditions and perform hysterectomy. You examine the uterus and its appendages, and they do not seem to be affected in any way. The woman gets up at the end of twenty-one days and suffers just as much as she did before. That is the kind of hysterectomy I would like to avoid. But I hope that the divine Creator will ultimately be more tender and forgiving in His judgment of the men who mutilate our women in that fashion than we are. Every one of us has had in our experience women who have come to us with pain and nausea, who live a life of misery, and we have been compelled to confess that we could not do anything by that route to relieve them. I expressed myself rather forcibly yesterday, which I afterward regretted, in speaking of the matter that was before us, and I do not want to be too strong in anything I may say today. We have all

kinds of surgeons, those who are a credit to the profession, and those who are a disgrace to it. In my opinion there is no greater disgrace than that when a man exhibits to his colleagues organs which he has removed from the human body that are comparatively healthy, and which our divine Creator consecrated to the highest and noblest end of nature—the propagation of the human race. I feel not only what I am advocating, but I believe that vaginal hysterectomy is destined to relieve many of the conditions that are practically impracticable by the abdominal route, and I think that hysterectomy today in the special and leading societies of America, similar to the savant society I have the honor of addressing, is passing through exactly the same stage of mental metamorphosis that we passed through when we echoed the removal of the ovaries. I agree with my colleague (Dr. McMurtry) that hysterectomy is just as much abused as used; but at the same time, I would like to see creep into the minds of our American surgeons a tolerance for this operation. It is not a brutal or mutilating procedure.

Dr. Rufus B. Hall, of Cincinnati.—I would like Dr. Dunn to answer a question. Occasionally we have an infected ovary with fixation of the tube on the ovary, and the latter goes on to suppuration. In such a case the clinical symptoms and physical examination tell us plainly that we have to deal with an infected tube and ovary as a result of gonorrhea, and it is fair to presume that we have pints of pus in the pelvis. Would Dr. Richelot in a case like this advise and practise the vaginal route?

Dr. Dunn.—If the adnexa of both sides are involved, Richelot advocates hysterectomy in every case; but if you have unilateral disease, what is the use of removing an ovary that may be well?

Dr. B. M. Hypes, of St. Louis.—I would like to know the after-effects of these operations. I have read and heard that there is prolapse of the contents of the bowel, as well as exstrophy of the bladder following hysterectomy by the vagina.

Dr. E. Ricketts, of Cincinnati.—I would like to ask the Doctor if hernia has followed any of the operations of vaginal hysterectomy?

Dr. Dunn.—I have not met with any cases of prolapse of the contents of the bowel. In reply to Dr. Ricketts, I would say this, that if the case is properly followed, tamponned every day, the vaginal opening irrigated twice a day as a rule, I have yet, in all of the hysterectomies I have seen, to witness a case of hernia. These parts, under proper treatment, daily contract, and as they contract they pucker, and the vaginal mucous membrane turning inward finally makes

a cicatrix which varies from one and a half to two inches in depth.

It makes a plug which acts as a pessary support to the abdominal contents. I really, frankly, cannot imagine under what circumstances, outside of malignant trouble, you could have a hernia following vaginal hysterectomy. It has not followed any of the cases that I have treated. Every one of you understands the question as to the ultimate and complete cicatrization and closure of the vaginal opening. It always resolves itself completely, compactly, and forms a resistance to the falling of the intestine. Of course, I admit that it is possible to have prolapse, but I have never seen it. One point of capital importance should not be forgotten. For twenty-one days after a vaginal hysterectomy the patient is kept rigorously in bed in a recumbant position, not for a moment is she permitted either to sit or stand.

The President.—We have with us a distinguished member of the profession in Chicago, and, knowing that he is an earnest advocate of vaginal hysterectomy, I am sure the Association will be glad to hear from him. I introduce to you Professor Henrotin.

Dr. Fernand Henrotin, of Chicago (by invitation).—I believe I was the first to perform this operation in this country, because so far as I know it has not been denied. I first demonstrated and advocated the operation in septic diseases in a paper that I read before a society in this city five years ago. I saw the gentlemen whose names have been mentioned perform the operation in France, and so it was not original with me in any way. I simply did what the gentlemen are doing in this country every year—I went over to France and saw the operation done, then came back and did it. I was simply and absolutely only an imitator. Having been long in the field and having watched the effects upon the local and general conditions of patients operated on, it is possible that I may speak of this subject with some experience. The operation was brought to my notice by Péan, of Paris, in 1886, and has gradually developed and made its way by the force of success. The operation is making its way here just as it has made its way abroad. The Germans, who absolutely condemned the operation in the beginning, are now using it. Frenchmen, who were constantly condemning it at the commencement, have come around. There are so many arguments that can be advanced in favor of this valuable procedure that it is bound to make its way here as abroad. A place is claimed for this among the recognized operations with those who appreciate the propriety of hysterectomy at all, for the following reasons:

1. In the variety of cases to which it is particularly applicable it is less dangerous than laparatomy.

2. It avoids to a great degree the contamination of the general abdominal cavity by a less disturbance of the exudate, and consequently protects the unaffected portion.

3. It produces less shock, and is therefore applicable to patients much debilitated by the existing disease.

4. It does away entirely with the abdominal scar, and therefore with the liability to hernial protrusion.

5. In common with hysterectomy by other methods, it results in a more certain, rapid, and complete cure than mere removal of the appendages.

6. It is decidedly preferable, and less dangerous in cases complicated with fecal, urinary, and vaginal fistulous tracts.

7. It has proved successful in many cases in which laparatomy in the hands of the most skilful operators has failed.

I have no prejudice whatever, and I believe there is a place for laparatomy always; but the man who dares to say at the present time that there is no place for vaginal hysterectomy in septic disease makes a gross mistake. The marks upon the walls are absolu tely too plain, and any man who has seen and practises this operation must see the value of it. I would rather do a perfectly clean laparatomy, as far as the satisfaction of the operation itself is concerned, than a vaginal hysterectomy. Whatever may be said by the gentleman who has preceded me, that vaginal hysterectomy is one of the easiest operations in surgery, I must confess that I practise it a good deal, and every little while I come across an operation of this kind that makes me perspire, and I have no hesitation in saying that in some cases it is difficult. You all know that laparatomy in the hands of one man and laparatomy in the hands of another is a different thing. We know there are some men who can do a laparatomy so skilfully, taking out the large pus-sacs so beautifully and quickly, that the woman has very little shock, and I am not talking about the average laparatomy. The cases that are unsuitable for laparatomy are the particular ones that are adapted to vaginal hysterectomy.

I will now say a few words in reference to those cases in which vaginal hysterectomy is contraindicated. If a woman has unilateral disease, non-suppurative in character, I believe it is best to enter the abdomen by a short incision, remove the diseased organs on the ailing side, or perform a conservative operation if possible. My reason for advocating the abdominal incision in such cases is that, after witnessing and performing a number of such procedures, I am convinced that the

parts can be inspected and repaired more perfectly and with less violence to the tissues than when brought out and handled and returned through the vaginal cut. In plainly marked suppurative cases, however, even though only one side is apparently affected, I would still choose the vaginal route, unless it were a very mobile, perfectly outlined sac-wall separated from the uterus. Such cases, when operated upon, frequently need drainage, and when drainage is supposed to be necessary it had better be managed through the vagina. I have started to do vaginal hysterectomy, opened a pelvic abscess, removed a diseased tube and ovary through the vagina, stopped the operation at that point, drained with gauze, and have seen that patient delivered of a healthy full-term child within two years. This, in answer to those who say that beginning hysterectomy means the abandonment of conservative measures. In doubtful cases it is perfectly feasible to open the posterior *cul-de-sac*, introduce the fingers and explore the pelvic cavity, ascertaining the condition of both ovaries and tubes, finishing up with a complete hysterectomy if both sides are found diseased beyound redemption. The age of the patient, the character of her symptoms, the chronicity of her ailments, and her general condition will frequently indicate which of these procedures is most desirable.

In some patients with chronic disease and large masses reaching to or above the umbilicus, the abdominal incision is frequently to be preferred if the mass feels very consistent and the patient is not too low. My reason for advocating abdominal incision is based upon the fact that probably we have here a large thick-walled abdominal or ovarian abscess which it would be very difficult to excise completely through the vagina; but in women very septic and very low I would still operate vaginally, removing the uterus if possible, even were I obliged to leave a portion of the appendages. In some women, where there is strong reason to believe that appendicitis exists, I would again operate abdominally, expecting to remove the diseased appendix at the same time. The same rule would apply when other abdominal disease, such as obstruction of the bowels, floating or movable kidney, is strongly suspected.

To conclude, we can say that both abdominal and vaginal hysterectomy have their fields in the surgery of the septic diseases of women; that he who would aspire to do the most perfect work in the alleviation and cure of these diseases must perfect himself in the performance of both varieties of work; that a certain proportion of cases can be relieved infinitely better by one method than by the other, although many patients in whom the indications do not plainly point to one variety of procedure, to the exclusion of the other, had better be

treated in the manner most familiar to the operator; that the choice of the method of operating will always demand a careful investigation into the history, symptoms, and local condition, and that he will attain the greatest success who cultivates the most careful discrimination, guided by skill, experience, and judgment.

Dr. Macdonald.—In the discussion of this question I quite agree with the preceding speakers, that the subject is an important one, and one, at least, which occupies a great deal of attention at the present time both in our societies and medical journals. I think we ought to go back somewhat and review the first principles. I take it that this division of opinion between us largely grows out of the fact of our training. Men who have come in from the field of general surgery and those who follow obstetrics may have different views and may operate very differently. The general surgeon in all of his work on the human body is in the habit of operating under his eye. The obstetrician, on the other hand, in much of the work he has done, as he comes into this field, is operating with the use of his finger. He has done operations which were somewhat simple, and in which tactile touch was resorted to.

The older members of this Association will remember in its first year a paper by Dr. Clinton Cushing, of San Francisco, on the treatment of pelvic suppuration or pyosalpinx. This paper will be found in the first volume of the Transactions. He reported a number of cases of pelvic abscesses, unilateral or bilateral, in which he performed the operation along the side of the uterus with what he called his dilating trocar, and was enabled to introduce drainage and bring about a condition of cure in the majority of cases. Now, the operation which these gentlemen describe for pelvic suppuration I take to be very similar to that one. I think that they hardly claim in the cases which I put to Dr. Dunn that they do anything like a complete extirpation of pus-sacs, but rather, if they have a large pus-sac on each side of the uterus involving the tube and ovary, that in the operation they do they simply make a cavity like this (illustrating), leaving, for the most part, the peritoneal covering and the upper layer of the protective inflammatory product, and as the operation ends and they put in their dressing of gauze or tampon they simply tampon back of the cavity. In other words, in order to secure drainage they have made an abundant opening and have scraped out of it a considerable amount of uterine tissue. It would seem to me very reasonable that I could put my finger readily into the bladder. On the other hand, in the case which I have in my mind, I could with equal ease introduce my fingers into the rectum in breaking up or separating adhesions. It is an oper-

ation beyond the eye. It is out of sight. You are dealing with tissues which you are unable to identify with simple tactile sense. The amount of perivascular inflammation, the relations of the ureter cannot be determined in the way that men do determine them otherwise.

If we go back a dozen or more years, we will find in some of our text-books that this very method which the gentlemen advocate with so much force was recommended and practised more or less, and by it surgical conditions of the ovaries and tubes and cysts were dealt with; hence the technique of the operation many of you are familiar with. I have removed dermoid cysts through an incision in the *cul-de-sac* of Douglas, but I have yet to see a single case in which I could not operate for that condition better by the abdominal route.

I quite agree with the statement that surgeons differ materially in the management of pus conditions. I was not able formerly to operate so well upon conditions of pus in the pelvis as I was after I used the Trendelenburg position for a few months. I did not keep my patients in that position very long. I used it for a few operations and could appreciate the conditions. I learned to take care of conditions with it which I otherwise could not have done.

From the remarks of some of the gentlemen who have preceded me we have been led to believe that vaginal hysterectomy is an operation from which patients recover very quickly. I do not want to be sarcastic, but the idea struck me that perhaps some physicians in reading this discussion might take it upon themselves to carry this method out as a simple office procedure, but this morning I have learned somewhat differently. In cases of the kind which we bring up here as a type, we have to dress for some considerable time. In a period of six months we will meet some six or seven cases of purulent disease in the pelvis that have to be dressed twice a day, and I must confess that I do not know of any trained nurses in my region competent to do this kind of work. If the surgeon has to wash out these cases twice a day and dress them personally for four or five months, I should then say that life is too short; that it is hardly worth living.

There are many surgeons in this country who, when they have a case of pus in the pelvis or an ovarian abscess to deal with, do not insert a drainage-tube, but close the abdomen and trust in God. By this, do not understand me as being opposed to vaginal drainage. I think some of the cases do better with it. I have no complaint to make with the method of taking care of these cases, but in many instances we are not able by careful manipulation to enucleate or get these abscess cavities out of the abdomen. We are told that we have not removed all of the disease by the abdominal method, on the ground

that a subsequent procedure is demanded. But if you have removed the appendages, the uterus in the great majority of cases will behave itself; if not, the use of the curette under ether will do all that is necessary for the patient.

I have looked up carefully the history of this movement of vaginal hysterectomy in the United States and have tried to follow it after the manner of Dr. Henrotin, and I find a great many of those men who are now warm advocates of this operation are men who have not been satisfied with the ordinary procedures of surgery ; men who have gone up and down the surgical field painting lilies and building castles of gold; men who have been taking kinks out of the back of Fallopian tubes; men who have been pulling them up into the abdominal incision and squirting bichloride solution at them and restoring them. There are many of these men in my region of country who are earnest advocates of this comparatively new operation—this complete extirpation. They have just swung over or tipped over, you know, beyond the median line—the line which distinguishes conservative surgery from ultra-conservative surgical interference. They are going to swing back in time, and they will get on to the standard time of surgery.

As to vaginal hysterectomy I can conceive of conditions associated with suppurative processes where it may seem advisable to approach them by the vaginal route, but those cases do not occur so frequently —at least, in my part of the country—as they evidently do elsewhere. A man must cover considerable territory, must embrace in his consultation practice a good many thousand people, in order to do three hundred vaginal hysterectomies within a period of three or four years.

Dr. Henrotin.—I do not know what Dr. Dunn said with reference to dressings after vaginal hysterectomy, but I will say that I remove the forceps at the end of forty-eight hours, leaving in the packing that I originally inserted, not touching it. I remove the packing on the fourth day, mop out the cavity, not wash it, and then reintroduce the packing. On the seventh day I again remove the packing, and use nothing thereafter but a vaginal douche which is given by the nurse.

Dr. Hall.—I am in accord with the other gentlemen present, that in making these operations we want to do the best we can for the patients intrusted to our care. In my operative work I have usually followed the abdominal route, and what I desire are the facts, and we should express our opinion freely upon this subject. I want to call attention to just one or two points. In the first place, in an ordinary case of suppurating ovary with the uterus fixed and pelvis matted together, I can see no advantage in the vaginal over the abdominal method of operating. Indeed, I think the latter promises as good, if

not better, success both for the patient and for the operator, and better because we know that a vaginal hysterectomy is one of the most difficult operations in surgery. If I had not made a number of vaginal hysterectomies for malignant disease I would not speak so positively. But I have made a number of these operations, and I know the difficulties attending this procedure very well. I also know the difficulties attending a section for removal of the appendages, and I believe from my experience the average cases give greater promise, all things considered, by the abdominal route.

Let us take that class of desperate cases of extensive suppuration, in which we are told that everything in the abdomen is flooded with pus; that the pus-sacs break and the pus liberates itself and the patient dies from septic infection. They do not all die from septic infection in which pus is liberated. Contrast with those desperate cases the ones in which the upper part of a suppurating ovary is left in the vaginal operation, as mentioned by Dr. Dunn, relying on repeated dressings twice a day for months afterward; these cases may recover primarily, but do they recover without risk to life ultimately? That amyloid degeneration may be going on in a given number of cases from suppuration is not purely theoretical. It is easy to understand how this must be when a part or half of a suppurating ovary as large as one's hand is left. The abscess cavity must granulate and contract and cannot heal in ten days, and the patient cannot go out calling socially in sixteen days. It is months after in the desperate class of cases dealt with by the vaginal route before the woman is fit to do anything. With the abdominal method patients do not have any such prolonged convalescence. From my experience, I can conceive of many complications and accidents following the vaginal route which do not obtain where the abdominal method is resorted to. I am not yet converted to the vaginal route, and until we have evidence forthcoming to overbalance the other side (the abdominal), I am ready to give my patient that method which in my judgment offers her the best chance for recovery.

Dr. Ross.—I endeaver in all of my work to look upon these new subjects that are opened for discussion with calmness and deliberation. I endeavor to give those who present the subject the credit of honesty of intention, and I also like to obtain from them the same courtesy. I have listened to the preceding speakers with a great deal of interest, and I came to this meeting prejudiced against the operation now under discussion. My abdominal work has not been as extensive as that of many of you, but I have operated on at least one hundred and fifty cases of pus-tubes. In this number I do not refer to cases of removal

of small cysts of the ovary and adherent appendages, but to desperate cases of pus-tubes in which bowel adhesions require suture—bowel adhesions which would produce subsequent fecal fistula—and I feel that within the last year or two my fingers have become more dexterous, that my methods have changed, and that many bugbears that presented themselves in early operations now cease to exist.

The operation now presented here has been unfortunately abused by the profession. We have a class of medical practitioners who have never been general practitioners, who suddenly blossom forth from a medical school, rush away for a little while to New York, Philadelphia, or some other medical centre, come back to a country town and search for women suffering from some disease of the uterus or ovaries on whom to practise their so-called specialty. They fail to see any further than these organs. They fail to understand that there is a neurotic condition existing in women that cannot be cured either by hysterectomy or oöphorectomy, or any other operation that may be advised, that may perhaps be better for a time after the operation, but that will recur. Vaginal hysterectomy has been abused in this direction. Dr. Henrotin did not intend to convey to you any idea that the operation should be performed in such cases. Let us look for a moment at the two schools. Some are wedded to the vaginal method, and others to the abdominal method of operation. The different routes are different notions. There is a middle ground upon which we must and will meet in the future, and it is in that ground that this operation has a place; I am convinced of that fact. I am satisfied vaginal hysterectomy for septic cases has a place in a certain limited class of cases.

A few weeks ago I operated on a case of double pus-tubes in a woman, aged fifty-five years. I never operated on a case before in which the abdominal tissues were as rotten as in her case. After operation the enema came out through the drainage-tube; the patient died. I have seen the enema come through the drainage-tube before. I did the operation with a mirror in my mouth, with the sunlight streaming down on the field of operation. The intestines were protected by sponges; I performed a slow operation to prevent contamination of the peritoneum, and gave the benefit of that to my patient. The bowel was pulled up and searched for openings, several were found and closed. But there are cases in which we may look with the greatest of care and may be unable to detect any opening, and yet feces will escape subsequent to operation through the drainage-tube. By the abdominal route in such a case there will be extravasation of feces, and the patient will very probably die. If the fecal fistula does not communicate with the drainage-tube the patient will die. In such cases I am

firmly convinced that we cannot do better nor yet as well by the vaginal route.

The operation, as outlined by Dr. Dunn, is one to which I would be totally opposed. Granted that suppurating ovaries and tubes can be entirely removed by this method, there is no reason why any man should not operate in this way, if he prefers it, as well as by the abdominal route. But there is a class of cases, as I understand it, in which these organs have to be left behind, and I consider that such cases will do better if operated upon through the abdomen. Take, for instance, a case in which we have a very large abscess of the ovary. Such an abscess I have drained from above and have cured my patient. Such tumors cannot be removed by the vaginal route, for the simple reason that it is impossible with the human finger to reach the limits of the disease, but they can be removed by the abdominal route. The abdominal route is the only one to be used in such cases. And why should such a patient lose her uterus? In cases in which there is profound sepsis, and in which we formerly drained from below in order to tide the patients over the difficulty, vaginal hysterectomy has a place. These are the main points that occur to me at present. In discussing the treatment of pelvic suppuration we should endeavor to be fair, and we should remember that those who are opposed to vaginal hysterectomy as a method of treating such cases have brains and ability, and that they have obtained good results by the abdominal method.

Dr. J. B. Murphy, of Chicago.—I think Dr. Dunn has been misunderstood, particularly as to the removal of the tubes and ovaries, and I desire to clear up that point. If you will recall Dr. Dunn's preliminary remarks you will understand that he was considering a simple, uncomplicated case, and illustrated it by placing the forceps in the position, which you saw, close to the fundus of the uterus on the tube. He did not mean that the forceps should be applied in that way and the tube allowed to remain in all cases. He meant that we should take out the tubes and suppurating ovaries through the vaginal route when they are diseased, and this Professor Richelot does in the great majority of cases, and in these cases the forceps should be placed outside the ovaries and tubes. The case which he mentioned in answer to Dr. Macdonald was an exceptional one. There is no question about the ease and readiness with which the tubes and ovaries can be taken out through the vagina, and if any of you were to see Péan, Hartman, or Richelot remove the tubes through the vagina, you would wonder why we take them out through the abdomen. I fully concur with Dr. Henrotin that the ovaries and tubes can be

removed much easier by the vaginal than by the abdominal method. I think the reason why my friend to the left (Dr. Hall) is not converted to the vaginal method is because he has not seen the best operating by this method. I must confess that before I saw such experts as Richelot, Hartman, Aubeau, and Eastman do this operation, I thought the abdominal route was easier and better, but I am now firmly convinced that the vaginal method is the one to be preferred in undertaking the removal of a pathologic uterus, pus-tubes, and many small ovarian tumors. The abdominal operation is a difficult one, and if some of you will go down to Indianapolis and see Dr. Eastman operate vaginally, or go over to Paris and see Richelot do it in five or seven minutes, I am sure you will be convinced of the superiority and ease of the operation. You can see and feel more by this method of operating than by the abdominal. It is not necessary that the operator in vaginal hysterectomy should pull on the uterus until he is black in the face, as I have seen them do; just split the anterior wall of the uterus, and it will fold forward without trouble.

The element of perforation of the abscess-wall is an additional one in favor of drainage, and while it is not applicable to all cases, it is applicable to pus-tubes; after you have split the uterus in the manner recommended by Richelot you can shell out the pus-tube through the vagina just as you can shell out the appendix when you go in after it through the abdominal route. Where the packing is kept up for six weeks, as in the case mentioned by Dr. Dunn in reply to Dr. Macdonald, the case is an extreme and exceptional one. Usually, the cases operated on vaginally are well and about at the end of three weeks. Of the six operations of this kind in my care in the last eleven weeks, four were up and left the hospital in twelve days, and not one of them showed signs of having had a severe operation after twenty-four hours had passed.

Dr. Werder (closing the discussion).—So much has been said on both sides of this subject that there is very little for me to add. I am glad that Dr. Murphy made an explanation with regard to the misunderstanding which arose from what Dr. Dunn said in reply to Dr. Macdonald. The object of the operation is not to leave pus-tubes and drain them, as has been remarked, but to remove them as well as the uterus. I am not wedded to vaginal hysterectomy; I intend to resort to both the vaginal and abdominal methods. When I am satisfied that both ovaries and tubes are to be removed, I prefer vaginal hysterectomy in the majority of cases; but where there is any doubt as to the condition of one tube or ovary, or the possibility of saving one tube or ovary, I certainly think the abdominal method is by far the best.

The operative results in all the eighteen cases have been good. The convalescence has been remarkably smooth and undisturbed by complications. After the clamps were removed the patients were practically well. As to the subsequent history of the cases, the time elapsed since the operations has scarcely been long enough to justify an opinion; but as far as I am able to judge, it certainly compares very favorably, to say the least, with that following abdominal section in similar cases.

ECLAMPSIA GRAVIDARUM.

By F. BLUME, M.D.,
ALLEGHENY.

ETIOLOGY.

Convulsions occurring in the later months of pregnancy, during labor, and immediately after childbirth, accompanied by loss of consciousness and followed in severe cases by coma, are termed eclampsia.

Authors differ widely as to the frequency of this affection, placing it at from one in two hundred to one in six hundred. These figures, coming almost exclusively from maternity institutions, are in the first ratio doubtless too high and do not correspond with those of private practice. James Ross[1] met with this complication eleven times in 6777 deliveries, or once in 616 private cases. This comparatively rare occurrence may be explained by the fact that the convulsive seizures are not dependent upon a single cause, but that in all probability a combination of causes is required for their production.

Many theories have been advanced to explain the nature of eclampsia; none has proven satisfactory, and the etiology of this grave complication of labor is still an undecided question.

The theory which has found the most advocates, and which still stands pre-eminent in the discussions of the etiology of eclampsia, is based upon the investigations of Lever, who first called attention to the relation between albuminuria and puerperal convulsions. His observations were confirmed by various authors, and led to the view that the attacks were the result of blood-poisoning by urea, that they were uremic and identical with those occurring in kidney diseases.

[1] American Journal of Obstetrics, vol. xxxii. p. 386.

Frerichs taught that true eclampsia occurred only in pregnant women suffering with Bright's disease. He, however, modified the older view, asserting that the urea contained in the blood-current underwent decomposition and was converted into carbonate of ammonium. While the possibility of this transformation was almost universally denied, a number of authors accepted the intoxication-hypothesis, the uremic origin, for all cases of puerperal convulsions.

The opponents of this doctrine, basing their arguments upon post-mortem examinations, proved that in by no means a small number of the cases the uremic intoxication theory was not applicable, both albuminuria and kidney lesions being absent. In order to meet these objections it became evident that new elements had to be brought into the discussion. Such attempts have repeatedly been made, but they have never been successful.

Hecker, supporting Frerichs's view, regarded especially the acute form of nephritis as an important etiological factor. External irritations are the exciting causes; they are only effective, however, in cases with kidney lesions. He admitted the absence of albuminuria in some instances, without giving any explanation.

According to Spiegelberg, all cases of true eclampsia are of uremic origin. The cause is a kidney lesion which either pre-existed or developed during pregnancy. In some instances the rapid development of kidney symptoms shortly before or with the paroxysms is due to an acute affection of the renal vessels, probably a reflex contraction, originating in the uterus and resulting in acute suppression of the urinary secretion. All cases of eclampsia without albuminuria are to be designated acute epilepsy. The term acute epilepsy was objected to, such a distinction being not warranted by the clinical phenomena. The explanation of the sudden development of albuminuria, however, met with more favorable consideration, and is supported even by recent investigators.

Urinary stasis, due to pressure of the gravid uterus upon the ureters, causing renal lesions and subsequently convulsions, is the theory suggested by Halbertsma; it was proven untenable by post-mortem examinations.

Pressure upon the ureters by the fetal head (Löhlein[1]), pressure

[1] Trantenroth: Zeitschrift für Geburtshülfe und Gynäkologie, vol. xxx. p. 136.

upon bloodvessels caused by the premature descent of the fetal head in the pelvis (King[1]), are two other theories which failed to give acceptable explanations.

A much-debated hypothesis was presented by Traube and Rosenstein, who held that the convulsions were the result of an acute cerebral anemia. Increased arterial pressure, resulting from hypertrophy of the left ventricle of the heart, causes in hydremic patients edema of the brain, which, by compression of the cerebral vessels, results in acute anemia with its consequences, convulsions and coma. Originally suggested by Traube as an explanation of the uremic paroxysms occurring in neprhitis, this theory was applied to eclampsia by Rosenstein, who asserted that in pregnant women, even in the absence of renal lesions, the essential features were present—hydremia, hypertrophy of the heart, and, during uterine contractions, increased arterial pressure.

Strange to say, this hypothesis, which clinical evidence as well as post-mortem examinations proved to be erroneous, led, for a time at least, many prominent obstetricians astray.

While it appears probable that cerebral anemia plays an important part in the etiology of eclampsia, the explanation offered by the Traube-Rosenstein theory is evidently not acceptable. Schröder,[2] commenting on this view, expressed his belief that the anemia is the result of arterial contraction due to reflex irritation of the vasomotor nerves. Based upon the experiments of Kussmaul and Tenner, who succeeded in producing convulsions in animals by ligating the carotids, he argued that it is in the highest degree probable that puerperal eclampsia, like the epileptic attack, is caused by acute anemia of the brain resulting from contraction of bloodvessels. The causes which produce this contraction are still unknown. He held that in pregnant, in lying-in, and especially in parturient women, as in children, there is an increased susceptibility of the nervous system, so that contraction of the vessels occurs from causes which under ordinary circumstances would not be effective. With this increased nerve irritability, the altered condition of the blood, due to kidney lesions, the irritation of peripheral nerves, possibly of the uterine nerve fibres, may suffice to produce contraction of the vessels.

The influence exerted by gestation upon the nervous system, the

[1] Parvin : Hirst's System of Obstetrics, vol. ii. p. 77.
[2] Lehrbuch der Geburtshülfe, 1886, p. 722.

increased nervous excitability, often so marked in primiparous women, led the old obstetricians to regard eclampsia as a reflex neurosis. A sudden emotion, anxiety, fright, were looked upon as the causes which provoke paroxysms. The effect of violent emotion upon the circulatory system through the vasomotor nerves is well known and may readily account for the occurrence of cerebral hyperemia or anemia, if we take into consideration the increased sensibility of the nervous system, which really is in a pathological and therefore predisposing condition. But hyperemia is at present supposed to be the effect and not the cause of the convulsions—a supposition which I believe to be not proven.

Bidder,[1] in his study of 455 cases of eclampsia, found that 337, or 74.3 per cent., were primiparæ—figures which are almost in accord with those given by Winckel, Olshausen, and Löhlein. This frequent occurrence in primiparous women may possibly find an explanation in the hyperesthetic nervous system, which, rapidly responding to mental impressions, may produce the attacks by reflex action upon the convulsive centres. Of interest and supporting this view are the observations of Joseph Price,[2] who first drew attention to the comparatively frequent occurrence of puerperal convulsions in primiparous women illegitimately pregnant.

This theory is slowly fading away, but in spite of all hypotheses the fact remains that the convulsive attack in a number of cases is exclusively the result of reflex nerve-action.

Blood-poisoning is the theory which of late received the support of many authorities. The toxic substance is still unknown ; it is by no means urea. Winter,[3] discussing this view, says it is not yet possible to decide whether the inflammation of the kidneys is primary and results in the retention of the substances which have been formed in the body, or whether the poisonous substances are external invaders and give rise to the nephritis as they are excreted, similarly to what occurs in scarlet fever, diphtheria, and other infectious diseases. This last opinion is believed to be the true one, and attempts have been made to seek in bacteria the noxious cause.

Micro-organisms have been found in the blood and urine of pregnant women suffering from albuminuria and eclampsia by Doléris[4]

[1] Archiv für Gynäkologie, vol. xliv. p. 167.
[2] Annals of Gynecology, vol. v. p. 487. [3] Ibid., 705.
[4] Prutz: Zeitschrift für Geburtshülfe und Gynäkologie, vol. xxxiii. p. 9.

and Blanc, while Favre cultivated a "micrococcus eclampsiæ" from the placenta of an eclamptic patient. Gerdes,[1] after making a number of bacteriological investigations, came to the conclusion that puerperal eclampsia is produced by a specific micro-organism found in the blood and various tissues of women suffering from this affection.

It is not necessary to comment upon these bacteriological theories, as carefully conducted experiments have failed to confirm the claims of the investigators mentioned above.

A review of the literature within recent years shows that the etiology of eclampsia has undergone remarkable changes. The theory of Frerichs, with its various modifications, has been continuously losing ground, and it is worthy of note that at the present day most of the leading authorities have abandoned it. It is only within a short time that this uremic-intoxication hypothesis has lost its attractiveness and that investigators are looking in another direction to solve the enigma of puerperal convulsions.

Recent investigations have again confirmed the intimate relation between albuminuria and puerperal convulsions. In four hundred cases of eclampsia observed by Olshausen, Dührssen, and Gusserow albuminuria was present in 98 per cent. But recent investigations have also shown that albuminuria is a very common complication during the later months of pregnancy and especially during labor. Trantenroth[2] found that albuminuria developed during the second half of gestation in 46 per cent. in women whose kidneys were normal before conception took place. In the vast majority of cases it is of renal origin and dependent upon a degenerative process in the kidneys—a condition described by Leyden as the kidney of pregnancy (*Schwangerschaftsniere*) and confirmed by various authors. The appearance of albuminuria during the first stage of labor, according to Trantenroth, is the rule, non-albuminous urine the exception; it is almost exclusively of renal origin.

On the other hand, the view to regard the terms eclampsia and uremia as synonymous does not receive confirmation from post-mortem reports. There can be no doubt that pregnant women, like any other human beings, are subjected to these serious forms of kidney diseases which, according to our experience, in some in-

[1] American Journal of Obstetrics, vol. xxvii. p. 467.

[2] Trantenroth, l. c.

stances terminate in uremia, convulsions, and coma. But such instances are rare. Prutz,[1] who made microscopical examinations of the kidneys of twenty-two cases dead from eclampsia, concluded that it was impossible to refer them to morbid changes in the kidneys except in a small number. He also emphasizes the striking disproportion between the gravity of the attacks and the intensity and extension of the renal disease.

It cannot be denied, however, that renal insufficiency plays an important part in the etiology of eclampsia, but only as a predisposing factor. "Renal disease", as Parvin[2] expresses it, "is not only very far from being a constant forerunner of puerperal convulsions on the one hand, but its absence on the other hand is no certain proof that such convulsions will not occur."

It is impossible to give a satisfactory explanation of eclampsia at the present time. The results of the examinations into the pathological anatomy are by no means sufficient to establish any theory. It remains to be seen how long the hypothesis of blood intoxication, which recently has been so favorably considered, will stand the test of time. There is something very striking in this theory, but does it explain the sudden disappearance of all the symptoms in the vast majority of cases? I believe not.

[1] Prutz, l. c.

[2] Parvin, l. c.

THE PROPHYLACTIC TREATMENT OF ECLAMPSIA GRAVIDARUM.

By H. W. LONGYEAR, M.D.,
DETROIT.

The practice of *preventive* medicine is said to be the highest art as well as the noblest duty of the physician, and in no class of cases will he better attain to this eminence than by the successful prophylactic treatment of the convulsions peculiar to the pregnant or puerperal woman. Eclampsia being, however, but a *symptom* of disease, and not the disease itself, and occurring as the result of more than one pathological condition, our treatment of prophylaxis will have to be applied to the amelioration or termination of the causative pathological lesion, so that in the treatment of the subject it will be necessary at the outset to define clearly the kinds of cases that come under the heading of the paper. The writer recognizes two varieties of convulsions that may occur as a result of the pregnant or puerperal condition—viz., first, those of a purely nervous character, which usually occur in women of neurotic habit and those who are predisposed to epileptic attacks; and, second, convulsions which occur as a result of some change in the blood and tissues of the patient, due to renal disease, as especially indicated by the presence of albumin in the urine.

Cases of the first class are comparatively rare, and when occurring the prognosis is usually good; but, as there are cases on record of a fatal termination, even in the early months of pregnancy, from this cause, prophylaxis should ever be in mind in their consideration. They may be of a hysterical or an epileptic character, and require for their prevention, in each variety, much the same treatment, although the prognosis in the cases of convulsions occurring in epileptic subjects, being much less favorable, would indicate for them more positive and active treatment. The systematic use of the bro-

mides and chloral hydrate is especially to be relied on during the progress of gestation, although other and more active agents may have to be employed, even to the extent of the induction of labor. During the progress of labor, chloroform is probably the most useful prophylactic and should always be employed in this class of cases, and the termination of labor be followed by the administration of suitable anodynes until the symptoms denote the return of the equilibrium of the nervous system. Blood-letting should be resorted to when the symptoms indicate the imminence of convulsions. Hypodermatics of morphine with atropine may be advantageously used where a rapid effect is required, but the tendency of the opium derivatives to produce cerebral congestion would in some cases contraindicate its use.

In one case of the hysterical variety seen by the writer, blood-letting would doubtless have averted the attack. The eclamptic seizure took place in the person of a delicate primipara about two hours after normal labor, and was preceded by a constant condition, following the close of labor, in which there was normal temperature, flushing of the face, suffusion of the eyes, and a full, tense, pulse of 100. Immediately after the attack twenty ounces of blood were taken from the arm, and no more convulsions occurred. The urine was examined a week before confinement and also immediately after the convulsion, and in both instances found to be free from albumin. Attacks of this kind are doubtless due to the irritation of the brain and spinal cord as a result of the congestion caused by the severe exertions of labor, and should be anticipated by the accoucheur during labor with suitable remedies for their prevention.

That cases of this class do terminate fatally, authentic records will testify. Dr. Paquy, at a meeting of the Obstetrical and Gynecological Society of Paris, in April, 1894, reports the case of an epileptic who became pregnant and had one hundred and nineteen fits at delivery. At the same time Charpentier stated that he had observed an epileptic who had convulsions during her first labor, became pregnant again, and died after a succession of fits during the fourth month. The latter case I believe should have had the benefit of operative interference, as, in the opinion of the writer, abortion is not only justifiable but demanded in cases of great severity of this kind, where medication and other forms of prophy-

lactic treatment fail to control the symptoms. A case in point was in the person of a patient of Dr. W. G. Henry, of Detroit, which I attended with him in July, 1894, at Harper Hospital. She was a primipara, aged twenty-three years, married two years, pregnant three and a half months; family history as bad as possible, syphilis, insanity, and epilepsy being all represented on the father's side. She had convulsions when a child, and was confined in an asylum for seven months at fourteen years of age. Began menstruating at seventeen. At sixteen she received an injury to the head by being struck over the left parietal region. Two months after conception occurred she began to have severe pain over the left eye in the region of the old injury, and ptosis of the lid developed; then aphasia was noticed, which gradually increased; the muscles of the left side of the face twitched constantly, and the tongue was protruded from the mouth and kept constantly moving, with a continuous drooling of saliva. With the progress of intensity of these symptoms the patient's mind became more and more disturbed, and she presented much the appearance of a case of dementia. Examination of the urine revealed no abnormality of that secretion. After a trial of nearly a month of antisyphilitic teatment, in connection with the symptomatic use of bromides and other medication, it was decided to attempt to relieve her by the induction of abortion, which was begun on July 17th and terminated on the 21st. Labor was induced by means of the introduction of a bougie, after a slight dilatation of the cervix, which was found to be nearly three inches in length. The operation was performed under complete chloroform anesthesia, and while the patient was coming out of the anesthetic she had a severe epileptic fit. After this she remained in much the same condition as formerly until the advent of severe labor pains four days after, when all her cerebral symptoms began to clear up. This amelioration of symptoms evidently began with the separation of the membranes and dilatation of the cervix, and continued until the expulsion of the contents of the uterus, when the symptoms cleared up completely, and on the day succeeding the abortion she appeared perfectly natural in every respect. The patient has remained well ever since, with the exception of three epilepitc fits which she had shortly after leaving the hospital.

In this class of cases, having no definite uniform pathological lesion by which we can regulate and guide the course of treatment,

and each case standing by itself and owing its existence to some peculiarity in the nervous organization of the patient, the prophylactic treatment for all cases cannot be laid down in general terms, but each individual case must be handled according to its own peculiar manifestations.

Such, however, is not the case with the second class. Here we have a definite and uniform pathological lesion which indicates clearly the *direction*, at least, of the course of treatment. The condition of the urine, furnishing us constantly with bulletins from the seat of war, gives us, when correctly read, the most reliable information as to the condition of the enemy within. Knowing that to the renal disease are due the convulsions, and that they only occur after functionation of the kidneys has been very largely and for a considerable time diminished, the plan of treatment can be very definitely laid out. The fort to be stormed is in plain view; the serious question is regarding the method of attack.

Early diagnosis is of the utmost importance to the success of any preventive treatment, and to insure this the urine of every pregnant woman should be systematically examined by the physician at least every two weeks after the sixth month. When albumin is found to be present, immediate treatment should be commenced, and daily examinations of urine made thereafter. The percentage of albumin present in the urine should not be considered the only test as to the patient's danger from eclampsia, as many patients will have considerable quantities of albumin and still be in no danger if the constituents of the urine otherwise indicate good renal functionation. On the other hand, a very small percentage of albumin—often only a trace—may be present in scanty urine of low specific gravity, which condition, if at all persistent, portends serious trouble for the patient, which, if not in the form of eclampsia, will be some other manifestation of cerebro-spinal lesion. As is well known, this latter condition of the renal secretion, when persistent, usually points to the diagnosis of contracted kidney and calls for prompt and decisive treatment if eclampsia is to be averted. The *condition of the urine* should be the guide for treatment rather than the *symptoms* of the patient, as there is often a lack of premonitory symptoms, the first to appear being the convulsion. The usual premonitory symptoms—vertigo, severe headache, ringing in the ears, blindness, etc.—which commonly precede an eclamptic attack,

if not entirely omitted from the programme, often precede the convulsion for so short a time that no opportunity is given for effective treatment before the storm bursts and treatment is handicapped. When these symptoms are present the most decisive measures should be adopted, but the constant aim in the prophylactic treatment should be to anticipate and prevent them occurring, and if the condition of the urine, and not the symptoms—or I might say the *lack* of symptoms—is taken for the guide, this can usually be accomplished.

The prophylactic treatment may be divided into *dietetic, medicinal,* and *operative*—the latter to be adopted as a last resort in case of failure of the others.

In simple cases of albuminuria, without scanty secretion, many patients will do well and be tided along to safe confinement on the exclusive milk diet without medication. When the urine is also scanty, diuretics should be used, and, when these fail, repeated purgations are indicated. Warm baths, to favor cutaneous elimination, should also be employed and iron tonics given. The patient's mind should be kept in as quiet a state as possible, as anything that tends to induce cerebral congestion may precipitate an eclamptic seizure. Venesection should be promptly used, especially in plethoric patients with full, strong pulse, as soon as any eclamptic symptoms appear. Even a slight cerebral congestion in such cases should suggest this remedy.

It is not necessary in this brief article to specify the various drugs to be used as diuretics, purgatives, etc., as there is unfortunately no remedy that the writer is aware of that is any better for the albuminuria of pregnancy than for the same pathological conditions under other circumstances; in fact, the opposite holds true in many instances, as medicines that yield favorable results in simple nephritis often fail utterly when used in the albuminuria of pregnancy. As an iron tonic, I believe that Basham's mixture is exceptionally good, which fact is doubtless due to its possessing also diuretic properties.

In those cases, previously referred to, in which the symptoms of contracted kidney are present, as indicated by the renal secretion remaining scanty and insufficient in spite of treatment, and in those cases where the use of the diuretics, purgatives, and warm baths bid fair to wear the patient out long before her time for confine-

ment, I believe that operative treatment should be instituted. If the period of viability of the child is reached I think there should be no hesitation in inducing premature labor, and in those rare cases that occur earlier I believe that the diagnosis of this organic lesion of the kidney should not only warrant but compel the performance of the operation.

Unfortunately for the free discussion of this subject in all its bearings, it has for its objective point eclampsia only, which is but one of the several outcomes of albuminuria of pregnancy; and as the prophylactic treatment of eclampsia also tends to prevent the other sequelæ of the disease, and as the treatment cannot be intelligently considered without some reference to them, and also for the purpose of emphasizing the necessity of operative treatment as I have indicated, I take the liberty of quoting a few statistics that bear on the subject.

As regards the mortality of albuminuria of pregnancy, even when *unaccompanied* by eclampsia, I quote the following from Cazeaux and Tarnier, page 497: "From a statement by this author [Imbert Goubeyer] it appears that of sixty-five cases of puerperal albuminuria unaccompanied by eclampsia, twenty-one proved fatal during pregnancy and the lying-in, and six from the third to the fourth month after delivery; five cases became chronic and were found to be existent two, eight, ten, and fourteen months and seven years after the labor." It seems to the writer that a disease which under ordinary treatment exhibits a mortality of about 40 per cent. certainly demands improvement in its therapeutics.

Again, I quote from Dr. Oui, of Bordeaux,[1] who observed twelve cases of albuminuria developed during pregnancy, in eleven of which the placenta was examined and in six found diseased; six out of the twelve children died, and no cause for their death besides the albuminuria and the placental lesions could be detected. In two cases where the mothers were submitted to strict treatment the children were saved; the six children who died were born of the remaining ten mothers. Three mothers died; the others were subjected to more or less careful dieting. Dr. Oui believes that where the milk diet does not improve the patient's condition it is advisable to induce premature labor to save the child. I would amend that

[1] Archiv de Tocologie et de Gynécologie, Paris, December, 1893

by adding, "and the mother," as I believe she should have at least equal consideration with the child. The old rule of giving the benefit of the doubt to the mother should not be forgotten.

It is well known that nephritis, when long continued, is liable to cause organic tissue changes which often survive the disease that caused them and that are more or less inimical to life. The arteries often become atheromatous and sclerosed, rendering the patient liable to accidents caused by brittle and non-elastic bloodvessels. Hemiplegia in these cases may result during some unusual strain on the circulatory system years after the initial disease, from the breaking of some of these brittle arteries in the brain. Total or partial blindness may likewise result from retinal hemorrrhage.

Churchill reports thirty-four cases of paralysis, in twenty-two of which the paralysis occurred during pregnancy and in the remaining twelve during or after labor. Imbert Goubeyer believes that the apoplexy causing the paralysis is due to albuminuria, and that uræmia is the direct cause of the various forms of puerperal paralysis. This conclusion may be mainly correct; that it is not always so has been proven in my own experience. One case in point was in the person of a patient of one of our Fellows, Dr. C. G. Jennings, of Detroit, which I saw with him. In her first pregnancy she suffered for several months with albuminuria and was delivered prematurely by nature. In her second confinement complete hemiplegia occurred at the conclusion of labor, and in this instance there was no albumin in the urine or other sign of renal disease. The lesion was doubtless due to the presence of degenerated tissue in the bloodvessels of the brain, resulting from the long-continued albuminuria of the previous pregnancy.

During parturition the accoucheur should watch closely the progress of labor and do all in his power to prevent, control, or modify the various causes of dystocia. If the pains become irregular or of a spasmodic character he must apply such remedies as will tend to restore them to the regular and normal type. The use of chloroform as an anesthetic will be usually of the first importance, as by its effect in diminishing the irritability of the nerve centres the pains will become natural and rhythmic in character. Chloral hydrate, the bromides, and warm baths may also be used to advantage

Venesection should be resorted to early if symptoms of cerebral congestion appear. Where nature's forces continue weak and

insufficient, and very little or no progress is being made, the forceps should be used as early as practicable, and the labor terminated in as speedy a manner as is compatible with safety to the maternal parts, as the danger from cerebral congestion is largely in direct ratio to the severity and duration of labor. After the completion of labor the uterus should be firmly held in a state of contraction by the hand for a sufficient time to prevent large clots forming within the organ, as the contractions necessary for their expulsion may tend to excite convulsions. Nerve sedatives should afterward be continued as symptoms indicate.

SO-CALLED PUERPERAL ECLAMPSIA IN ITS RELATION TO INSANITY.

By W. P. MANTON, M.D.,
DETROIT.

There is a tendency on the part of most of us to accept foreign statistics, especially those coming from Germany, as representing unqualifiedly the status of any given condition in this country, as well as in the country from which such statistics have emanated. The differences in the habits of life, the modifications due to environment, and the constitution of the peoples of other nations are either overlooked or ignored, and the results of the investigations abroad credited as obtaining in the same degree in like conditions in the New World as in the Old. While foreign statistics of disease are exceedingly important and valuable to us in many ways, I am convinced that they are often misleading as regards corresponding conditions in our own country, and hence should be more generally looked upon as local contributions only to the sum total of our knowledge of a given subject.

Some four years ago, in an able and elaborate paper by Olshausen on the puerperal psychoses, with especial reference to insanity as a sequel of eclampsia,[1] a greater importance was given to the latter disorder than the experience of the majority of American observers would seem to warrant. In the following brief communication I have summed up the results of my own researches in this matter, and I believe that, for this country at least, the figures presented represent more correctly the connection between the two disorders than do those of the authority referred to.

An attempt to establish a relationship between two morbid somatic affections, the one acting as cause, the other appearing as

[1] Zeitschrift für Geburtshülfe und Gynäkologie, 1891, Bd. xxi., H. ii., p. 371.

effect, presupposes a knowledge of the etiology of the exciting agent. Of so-called puerperal eclampsia as a factor in the production of insanity this cannot be claimed; for, while the literature of this disorder is voluminous, our actual knowledge as to its origin is still indefinite and unsatisfactory, and any effort to trace the connection between the two diseases by arguments based on the various theories and hypotheses which have already been advanced as to its etiology must inevitably lead to disappointment and confusion.

In discussing the relationship of these two conditions, therefore, we must acknowledge our ignorance concerning the primary etiological factors concerned in the production of eclampsia, and attempt the solution of the question of its bearing on the insanity by confining our attention to the investigation of such facts as may be at our disposal.

According to the latest statistics to which I have had access, those of Bidder,[1] in 60,583 deliveries eclampsia occurred 455 times, or once in about 133 labors. Of this number 79, or 17.3 per cent., proved fatal; but as 31 of the women died of complicated disorders —sepsis and pneumonia—only 48, or 10.5 per cent., can be said to have succumbed to the convulsive attacks. These figures are much lower than those given by Goldberg,[2] who records a mortality of 24.7 per cent. Accepting Bidder's 10.5 per cent. as the lowest mortality, we have left 89.5 per cent. of eclamptic women to be accounted for as cured, that is, as recovered from the immediate effects of the convulsive disorder. We are informed by obstetrical writers, however, that, while recovery from the primary disease may take place, other conditions, notably insanity, may follow in its wake; and as the original malady is one in which the nervous system is principally involved, it would be natural to suppose that the number of cases of mental breakdown would be not inconsiderable, as pointed out by Olshausen.[3]

To ascertain this point I had have recourse to three sources of information:

a. Statistics from private practice.

b. Statistics from the lying-in hospital.

c. The records of hospitals for the insane.

[1] Archiv für Gynäkologie, 1893, Bd. xliv. p. 165.

[2] Archiv für Gynäkologie, 1891, Bd. xli. p. 295; Bd. xlii. p. 87.

[3] These statistics have been introduced for comparison.

a. Never having had a case of insanity following eclampsia in my own practice, I have collected 8868 cases of delivery reported by eight competent observers and published in current literature.

In this number I find that eclampsia is noted as having occurred 33 times. *In not a single instance is it stated that insanity followed the convulsive attacks.*

b. During the four years, 1891–94, inclusive, 282 women were delivered in the wards of the Detroit Woman's Hospital, eclampsia occurring in two cases. Both of these recovered without symptoms of mental alienation.[1] This seems the more remarkable since of the whole number of patients confined 233 were unmarried.[2]

c. During the same period (1891–94) there were admitted to the three principal asylums of Michigan with which I am connected 1271 female patients. In this number the insanity was attributed to puerperal causes in 110 instances. In two cases only was eclampsia put down as the exciting cause, and one of these patients was a readmission, the woman having recovered some years before from the orginal mental sickness.[3]

While the number of cases which I have brought together in the above statistics is not large, it is sufficient, if the three different sources of information are considered, to enable us to arrive at a definite, and I believe accurate, conclusion regarding the relationship existing between puerperal eclampsia and insanity. The conclusion is that insanity as a sequel to puerperal convulsions is of such exceedingly rare occurrence in this country as hardly to deserve consideration in this connection.

DISCUSSION ON PAPERS OF Drs. BLUME, LONGYEAR, AND MANTON.

Dr. Emory Lanphear, of St. Louis.—At the request of the President, I have consented to open the discussion in a five-minute talk on the treatment of eclampsia gravidarum. What I have to say I

[1] Both of these cases occurred during my own service.

[2] Statistics furnished by Dr. Jessie L. Herrick, Senior House Physician.

[3] I am indebted to Drs. Edwards, Ostrander, and MacGurgan, of the Michigan; Dr. Morse, of the Eastern; and Dr. J. D. Munson, of the Northern Asylum, for examining the records of their respective institutions for these figures.

must premise by the statement that I speak not as an obstetrician, but as a surgeon and consulting physician. In my province as consultant it has been my fortune to see a goodly number of cases of puerperal eclampsia, and in former years I must confess that whenever I was called to such a case I responded with reluctance, but since the adoption of the treatment of which I shall presently speak there is no case to which I respond with greater alacrity and pleasure than one of puerperal convulsions, because we have now a method of treatment which in most cases will prove absolutely curative.

There are two classes of puerperal convulsions: (1) those which occur before the delivery of the child, and (2) those occurring after delivery. The treatment may be considered under four heads: 1. Chloroform and chloral. 2. Emptying the uterus. 3. Purgation and venesection. And then the fourth, of which I will speak later.

Of course, it is generally admitted that the chief indication in cases of puerperal convulsions occurring before the emptying of the uterus is to deliver the child and the placenta. This may be accomplished sometimes with readiness by dilatation of the os with the fingers, or with Barnes's dilators, or other means, and delivery with forceps. In cases where I have not been able to dilate the cervix with sufficient rapidity, I have adopted the expedient of seizing the anterior lip with the vulsellum and cutting with straight scissors the cervix on both sides, which procedure enables me to introduce the forceps with readiness in most cases. When it is impossible to dilate the uterus and we cannot deliver with forceps, I believe Cesarean section is justifiable in every case. Of eclampsia gravidarum occurring before the delivery of the child, in which it is impossible to empty the uterus from below, it is justifiable to perform Cesarean section speedily.

With regard to the third measures, purgation and venesection, you are familiar with them, and it is unnecessary to dwell upon them.

Of the fourth method, the intravenous injection of normal salt solution, we have heard nothing. Of it I shall speak in one moment, when I take up the second class, that is, those cases which occur after the delivery of the child. Here we must have recourse, first, to the subcutaneous injection of pilocarpine; second, to the administration of chloral hydrate or the inhalation of chloroform; and, third, free purgation with elaterin and venesection. But the most important point of therapeusis is the intravenous injection of normal salt solution. This can be done anywhere by any practitioner at a cross-roads in the country, if he has a hypodermic syringe, a piece of clean paper to make the funnel, and a piece of rubber-tubing to connect the funnel with the syringe. This solution should consist of six or eight parts of salt to

one thousand parts of boiled water. The boiled water should be passed through a number of folds of cheese-cloth or muslin, which also has been boiled and passed, preferably, through a glass funnel. In the absence of any funnel at the house, an artificial one can be made by folding up paper. The tube having been sterilized by boiling or emersion in some antiseptic solution, it is attached to the needle and the water is allowed to flow and is handed to an assistant, while the surgeon opens the veins or cuts down to a vein. This needle, while the water is still running, is thrust into the vein, and one to three pints of this solution is introduced. What is the result of this? By the introduction of large quantities of normal salt solution in the circulation we do two things: first, we so augment the quantity of blood in the veins that we deluge the toxins which are producing their poisonous effects upon the nervous system; and, second, within five minutes from the time the intravenous injection is made you will find the kidney, which has been utterly inactive, springing into activity and the urine coming from the ureters. You will tide your patient over until these kidneys, unless there be gross degeneration, go on with their functions, and thus save valuable lives. You do this every two or three hours if the convulsions are not checked, and you stand by the patient for thirty-six hours, not leaving her for one instant, and upon the slighest indication of the return of the convulsions you repeat the intravenous injections. By this line of treatment you will be able to tide over most cases and save the vast majority of them. Of eighteen cases in which this method has been tried, not one death has occurred.

Dr. Herman E. Hayd, of Buffalo.—This is a very important subject both to the specialist and general practitioner, and I wish to accentuate what Dr. Longyear has said—namely, that in no place is preventive medicine of more value than in cases of eclampsia gravidarum. I am satisfied that if we could have under observation our puerperal patients during the first months of pregnancy until the termination of labor, we would hear of few cases of convulsions, and although we ordinarily have a signal in the presence of albumin in the urine in those patients where we anticipate eclampsia, we must not forget that in many cases convulsions occur where no albumin whatever can be detected in the urine, and, moreover, after frequent examinations. At the same time, we must not be deluded with the idea that a woman has functionally weak kidneys because she is not ordinarily excreting what Flint and other physiologists have determined to be the normal amount of urea—500 grains. I maintain such an amount is the exception by the most advanced and best tests. We rarely find a woman who excretes more than 350 to 360 grains of urea in the twenty-

four hours. I am inclined to think that we cannot place too much importance upon the relative specific gravity of the urine. If a patient presents herself, although she be voiding a goodly amount of urine, if the specific gravity of it is 1002, or 1005, look out. The thing to do is to immediately stop all solid foods, place the patient on a milk diet with plenty of water, and you will be surprised to see how the specific gravity will increase. I am inclined to think that a great many of our young married women in the better walks of life pass urine of a very low specific gravity, as low as 1005 to 1006; and although I do not find albumin in these cases, I invariably put them to bed or rigorously diet them. Another important point is to impress upon the expectant puerperal woman that she should drink plenty of water. Women drink but little water. I am satisfied if there is any place where our ordinary mineral waters come in, it is in these cases. If you tell these patients to drink two quarts of our Niagara water, they will not do it; but have them take two quarts of Gray's mineral water, then they feel you are doing something for them, and in that way you can relieve their systems of poisonous excreta.

Often one of the most difficult things to determine is whether an ordinary case of eclampsia is one of puerperal convulsions or epilepsy. We had such an experience in Buffalo. A patient had frequent epileptic fits, and a number of friends who saw her in consultation were alarmed as to her condition, yet the attacks were epileptic. No albumin was found in the urine; she was excreting a good amount of urea and passing urine freely.

Dr. C. C. Frederick, of Buffalo.—I have little to say. In my hospital and private experience in the last ten or twelve years I have had charge of upward of two thousand cases of labor, and I want to make the statement that in no case of labor which I have seen a week previous to confinement was there eclampsia, and I have cases sent to the maternities of which I have charge in the advanced stages of anasarca, with small quantities of urea, with edema of the extremities, etc. Every one of the cases, where proper treatment was instituted before confinement, were steered clear of puerperal convulsions, and particularly when they were under treatment ten days previous to labor I never encountered a case of puerperal eclampsia.

I am very much impressed with the suggestion of Dr. Lanphear with reference to intravenous injections of normal salt solution. In addition to that treatment, I would say that in a certain class of cases, where there is high arterial tension, veratrum viride can be used to advantage. Where the patients are anemic and venesection cannot be resorted to, it will help to lower the blood-pressure, and it materially

relieves the eclamptic seizures when used in connection with chloral hydate, morphine, and chloroform. I never have tried intravenous injection of normal salt solution, but I shall do so in the first case I have to treat.

There is another element that is not taken duly into consideration, and that is the personal equation of the patient. Some women will have eclamptic seizures with a certain amount of systematic poisoning, while others will go through labor without any convulsions. We must consider the personal characteristics of every patient. The nervous system of a woman of a highly neurotic temperament will be upset by ptomaïnes, etc., while a woman of a phlegmatic temperament will go through labor and not show the slightest signs of convulsions. I have seen women who had no albumin in the urine, in which the quantity of urea secreted was considerable at the time of convulsions, and I have seen other women go through labor who had large quantities of albumin in the urine and small quantities of urea without convulsions —that class of women in whom we would expect puerperal eclampsia, and yet they did not get it.

Dr. Longyear.—There is very little to say in conclusion. A remark made by Dr. Frederick leads to a few ideas. He spoke of a difference in susceptibility of patients to convulsions. We all know that the convulsion is an exceptional symptom of albuminuria. We find after death following albuminuria of pregnancy, where there has been no sign of convulsion, cerebral effusion. I have seen these cases.

Some of my cases have died in this manner even when I had delivered them early. My mistake was in not delivering them *earlier*. In the prophylactic treatment I emphasized the point of early delivery, and said that we should be guided by the condition of the urine and not by the symptoms of the patient.

Dr. Manton (closing the discussion).—I had hoped that some of our alienists would be here to discuss this subject.

The late Dr. Ross, of Toronto, father of our Fellow, had a series of 6777 cases of confinement with eleven cases of eclampsia, and two only of these eleven died. Here we have a large number of cases of confinement with a very small mortality from eclampsia.

In the majority of cases of eclampsia we have high arterial tension, and I do not quite understand how the intravenous injection of normal salt solution can in any way prove beneficial, or in what way it can act in those cases in which the speaker claims the eclampsia is due either to pressure or occlusion of the ureter. I do not see what the object would be in getting the kidneys to functionate if the water does not drain off. I may have misunderstood the doctor as to the time of the

injection, but certainly before delivery it would seem very undesirable treatment.

As far as the etiology of puerperal convulsions is concerned, we have as yet very incomplete and unsatisfactory knowledge of its origin. If you have looked over the literature of the subject for the last ten years, and have paid particular attention to the pathological findings which have been made in Germany and France, you are aware that there is hardly a single organ of the body but what has been found to have undergone greater or less morbid change as the result of this disorder. Personally, I believe we will have to go back to the old idea warmly advocated twenty-five years ago by Tyler Smith—that of underlying nervous instability. I believe that the nervous system is responsible in the beginning and the end for puerperal convulsions, and that other conditions, such as uremia, ptomaïne-poisoning, etc., are secondary; and that while they all add to the sum total in producing the convulsions, the nervous system is primarily responsible. In the paper presented I have simply attempted to demonstrate that insanity is a rare sequela of eclampsia in this country, whatever it may be in Germany or elsewhere.

DIAGNOSIS OF INTRA-ABDOMINAL TUMORS.

By A. H. CORDIER, M.D.,
KANSAS CITY.

I FULLY appreciate the vastness of the subject I am to read about today, and I am aware how much must remain unsaid in a short paper. I realize that there is nothing of more import to the reputation of the surgeon, the good name of the family attendant, and last, but not least, the welfare of the patient, than a correct diagnosis. A correct diagnosis is especially desirable in abdominal surgery. For it is here that an error in an opinion bearing on the diagnosis and bad judgment in resorting to surgical methods are expensive to human life. While I do not claim that a positive diagnosis is possible in every case, I do believe that, with a few exceptions, an absolute and correct opinion can be arrived at in most cases. A tyro can say that this case or that has a tumor in the abdomen, and that, too, with his imperfect methods of investigation, but he could not, without accidentally guessing it, give an opinion deserving of much credence. I would not have you believe for an instant that I think the diagnosis of intra-abdominal neoplasms an easy undertaking. Far from it. I consider it extremely difficult unless the recognized methods of investigating these cases are carried out in their fullest details. This is what makes it difficult. When we fail to make a positive diagnosis let us look back over our methods closely, and see if some of the details have not been either neglected or ignored entirely.

Lives have been lost as the result of an exploratory incision, the necessity of which might well have been avoided by a careful examination and a well-gotten history. An exploratory incision should not kill, but it has in the practice of the most skilled and experienced surgeons.

In examining a patient, the following methods and procedures should be followed :

Inspection.
Palpation.
Percussion.
Auscultation.
Exploratory puncture (dangerous).

To which we may, in addition, call to our aid :

1. Microscope.
2. Chemical reagents.
3. Anesthetics.
4. Photography.
5. Illumination.
6. Distention with gas or liquids.

The surgeon should early learn to observe what he sees. With this faculty uncultivated his deductions must be faulty. By inspection we detect the surface landmarks—the skin discolorations and markings or any cachexia the patient may be suffering from as manifested on the surface. The movements of the intestines or other movements from within are often discernible. Any irregularities of the surface or bodily symmetry are quickly recognized by the trained eye. It is necessary to recall these various methods as aids to diagnosis only to suggest their application, but it is here we are too often faulty in the carrying out of the details and in correctly interpreting their significance. The natural topography of any region under investigation should be familiar, and the infrequent physiological deviations these localities present should be taken into consideration in making a deduction as to the character of the pathology. Some growths appear in certain regions with a frequency suggestive of an inherent tendency or affinity for that organ, while another form of growth uses the age period as its elective time of development, without or with a special disposition to affect any given part. All these traits of the suspected neoplasms must be duly weighed. Of much import is the clinical history, without which a positive diagnosis is only problematical. Endeavor to first determine if the growth is of a fluid or solid character. Having satisfied the mind on that point, try to determine whether you have to deal with a malignant or benign growth. Here the duration of the presence of the growth, the effect on the

constitution, the injury to surrounding organs, and the organ supposed to be affected will bring you nearer to an understanding of what you have to deal with. The examination of the various discharges, both natural and fistulous, often reveals truths invaluable as aids to a positive diagnosis.

In the elimination of the various supposed abnormal conditions, credence must be given the peculiar, though not rare, trait some organs have of leaving their natural habitat, or to others that have been anchored by one of nature's faults during the intrauterine life of the individual. Even the rare occurrence of transposed viscera must not be lost sight of.

Tumors through which gases are detected by the gurgling indicate either an involvement of the bowel in the tumor or pressure of the growth on the bowel, with adhesions to the same. Now, if this symptom be coupled to a history of a pyloric cancer or a cecal growth, it is confirmatory in its indications. Some growths have a disposition to change positions, but all growths have one or more attachments, and it is safe to infer that this attachment is to the site at which the neoplasm had its beginning, and its movements will be only around an arc of a circle with the pedicle attachment to the *diagnostic points*. Adhesions may prevent a growth from moving, or may anchor a growth in a locality far from its original point of starting. The history of inflammatory attacks and the pain will come to your rescue here. The character of the pain and the amount and area of tenderness are invaluable aids. The withdrawal of free fluid from the peritoneum will often show the presence of a tumor before undetected. I know of no condition requiring a more careful examination in order to decide as to whether all or part only of a fluid in the abdomen is free or enclosed in a sac.

Tumors of the stomach, as a rule, develop in localities most accessible to the examiner; that is, in the anterior wall and movable extremity of the organ. Gaseous distention of the organ often determines the existence or absence of a growth in this viscus, and at the same time leads one step closer to a diagnosis by eliminating or confirming the stomach as a suspect.

Discharges from natural outlets or fistulous openings should be examined most carefully, macroscopically and microscopically. The use of chemical reagents should also be resorted to in most

instances where a doubt exists as to the exact character or source of the material being examined. By this precaution bile, urine, pancreatic, gastric juices, feces, etc., may be detected in fluids escaping from unnatural openings, the character of which could not otherwise be determined. Tumors of displaced or ectopic viscera require careful scrutinizing to avoid mistakes, but usually can be detected by recalling the natural site of that viscera and detecting its absence from its natural locality. Vascular tumors, aneurisms, and angeoimata have characters peculiar to themselves, the pulsation being in unison with that of the heart. The fetal heart-sounds are quicker and are of a somewhat different character, but should be thought of in examining a growth in the lower abdomen of a female patient.

An enlargement of an organ, due to an obstruction of its venous system, may simulate a neoplasm, and thus mislead the surgeon, such being the case in splenic enlargements accompanying cirrhosis of the liver. Here a close inquiry as to the habits and presence of ascites, and often hemorrhages from the stomach, are diagnostic. A thorough knowledge of the anatomy and physiology of the nerve-supply of a given locality is essential in correctly interpreting the significance of localized and referred pains. Localized tumors, due to a dyscrasia, as syphilitic nodules of the liver, may be diagnosticated both by the history and evidences of the constitutional disease in other parts of the body. It is often difficult to obtain a correct clinical history from the patient, but a close inquiry from the physician will usually elicit quite an exact history. The physician should never make his questions in a leading manner. As a rule, early growths are diagnosticated much more easily than if they are seen late, when many complications, due to involvement of distant or surrounding structures are present, and all normal landmarks are destroyed and the original pathology is found blended with that of a later period.

I am cognizant of the statements made by some of our best operators that it is impossible to make a diagnosis prior to an exploratory incision, yet I do not agree with them. They are great men as operators, but when it comes to sitting down to deliberately get a correct history, and to resorting to all the diagnostic methods applicable, they are sadly wanting in patience, time, and disposition to go at it systematically.

They simply say, "We have here something to be removed," and cut down to it, and either complete the work or close up.

The retention of sufficient physiological material or fluids to cause a perceptible tumor will produce, as a rule, evidences of a partial or complete suspension of the physiological action of these fluids, or the indications of a diminished or changed character of that escaping from the body. The tumors of the gall-bladder, and hydronephrosis, may be cited as illustrative of each of these conditions. These growths (cysts) may, and often do, disappear, and their temporarily suspended function is resumed. A tumor, fluid in character, on either side, that from time to time disappears to reappear again, is always a hydro- or pyonephrosis.

Photography, with its wide application, has been used by myself and others as a diagnostic helper. It has served me well in demonstrating to a hysterical patient how fruitless were her attempts to deceive me in her endeavors to palm off the spurious for the genuine article. A photograph of her protuberant abdomen while awake and another while under an anesthetic soon convinced her that her tumor was a brain tumor in the abdomen—a phantom.

Size perception is best understood and recorded by the aid of the camera. A comparative record of growth is thus accurately recorded, rapid growths simulating pregnancy may be thus recorded from time to time.

The camera has invaluable uses in recording cases. Landmarks may be made by the surgeon with pen and ink on the abdomen and their relationship to rapidly growing neoplasms faithfully recorded for comparison at some future time.

Transient physiological enlargement of an ectopic organ is noticed only in two organs, the spleen and the kidney, the former during digestion or soon after a meal, or during acts of physical exertion, and the latter during the menstrual period. Enlargements that are sudden or that develop within the space of a few moments(?) or hours are always due to either hemorrhagic infiltrations, the presence of retained or extravasated air or gas, or to the rapid accumulation of retained physiological products. The mere mention of these occurrences is all-sufficient to recall the diagnostic methods necessary to make a correct deduction in the majority of instances. If every physician would familiarize himself with the clinical history of the presence of pus or other sep-

tic material there would be fewer cases of malaria, grip, typhoid fever, and neurasthenia.

To make a diagnosis in a consultation is often very hard, for it is here that one usually has the opinion of one or more practitioners as to the condition, they having examined the case before you are called. It is a good and proper practice for you to take the case for examination as though you had not had an opinion expressed to you by anyone. You thus go into the case not with the conviction that you have this or that preconceived condition, but with the knowledge that something is wrong, and the belief that you can find out for yourself what it is by a thorough and systematic examination such as I am advocating in this paper.

Pus in the pelvis is, to me, one of the easiest conditions diagnosticated. A few years ago the negro race was considered especially liable to the development of uterine fibroids; so much so that some older authors estimated that from 40 to 60 per cent. had, at some period of their existence, these neoplasms. But with the advance in knowledge during the last decade in pelvic pathology it is found that these growths are not found with greater frequency in the colored than in the white race. On the other hand, they are very frequently afflicted with ovarian abscesses and pyosalpinx, conditions the sequelæ of gonorrhea, abortions, and tuberculosis.

The oculists have developed the science of diagnosis to such an extent that it is almost exact. Why should we not be able to do likewise in abdominal diagnosis, where our lesions are larger and more easily defined? The oculist today can make diagnoses which, had he only claimed the ability to make a few years ago, would have caused only words of ridicule and disbelief. The eye conditions in locomotor ataxia and retinitis albuminurica are discernible long before the general manifestations can be discerned.

Gentlemen, as you see, I have not taken up individual neoplasms, but have generalized by touching principally upon the salient diagnostic points that enable one to eliminate or to arrive at his diagnosis by exclusion. I trust that you will make up in the discussion for the shortcomings in my article.

DISCUSSION.

Dr. W. G. Macdonald, of Albany.—I hardly feel that we ought to allow so valuable a paper as that of Dr. Cordier to pass without some discussion. It presents conditions in which, it seems to me, as abdominal surgeons, we find it so easy to make an exploratory incision or to get into the abdomen, and very often we take little pains in arriving at the best approximate diagnosis we can make. We have here a condition which evidently ought to deserve an exploration. If I took the time or trouble to investigate a thing thoroughly, and if I did not come to a conclusion, I would operate anyhow. That is a careless sort of way. The true surgeon always endeavors to make the best possible diagnosis in the case before he undertakes an operation. In making an exploratory laparatomy you may encounter a condition which is remediable, but one which you are not quite prepared to meet at the time. Perhaps you have not a button with you, and you may need it. Another thing I find which is likely to occur where you do hospital work in a large general hospital is, that you depend in a measure upon the house surgeon for your history of the case. The case-histories are not well taken; the house surgeons do not go into the histories as specifically as they should. Usually you have imperfect histories of your cases. We should endeavor to get the case-record in all of its relations to investigation of the different systems. Such a record has not only a bearing upon the operation itself, but upon the subsequent prognosis of the case. It is easy enough for a man to recommend the patient to go to a general hospital and have an operation performed, without knowing specifically the condition of the kidneys, and perhaps three or four days subsequently the surgeon finds that he had overlooked a very important matter. This paper, therefore, is in the right direction, and it seems to me from a medico-legal standpoint that the surgeon is bound to make the best diagnosis possible before he resorts to surgical interference.

PNEUMO-PERITONEUM.

By JAMES F. W. ROSS, M.D.,
TORONTO.

To the abdominal surgeon gas in the peritoneum is a matter of a great deal of interest. Tympanites may be defined as the distention of the abdomen that results from excessive accumulation of gas within its cavity.

Pneumo-peritoneum may be classified as follows :

1. Tympanites intra intestina.
2. Tympanites extra intestina.
   - A. Traumatic.
     - *a.* From without.
     - *b.* From within.
   - B. Non-traumatic or spontaneous.
     - *a.* Without liquid, gas odorless.
     - *b.* Ascites, and gas odorless or fetid.
     - *c.* Pus and fetid gas.
3. Tympanites intra et extra intestina.

1. Tympanites intra Intestina. This variety is frequently met with and does not need to take up much of our time. The gas collects in the interior of the intestines as a consequence of inflammation of the intestines themselves or of their serous coat; as a consequence of obstruction of the lumen of the bowel by a growth in its interior or compression from without; as a consequence of the administration of such poisons as atropine and the accompanying paralysis of the muscular wall of the intestines. I have seen one marked instance of intestinal inflammation as the result of the administration of a poisonous but not fatal dose of atropine. The abdominal surgeon dreads to see distention, as it indicates to him the onset of an attack of peritonitis. In such cases it is generally supposed to occur as a consequence of what is called a septic paresis; the bowels are thus deprived of their peristaltic action

through some influence brought to bear on the nerve-supply by the poisoned blood. This poison, whatever its nature may be, has an effect on the intestines similar to that of atropine administered in poisonous doses. I believe, however, that the filling of the intestines with gas is not solely due to the loss of power of the muscular wall, but that there is another factor playing an important part in the collection of this gas. In these cases gas forms more rapidly than in the healthy individual. It not only collects more readily, but it forms more rapidly. A decomposition or abnormal chemical alteration of the intra-intestinal contents must be permitted to allow of the excessive formation of this gas. This condition may therefore be considered as a combination of septic intestinal paresis and septic intestinal indigestion.

2. Tympanites extra Intestina. This second variety I have divided into traumatic and non-traumatic or spontaneous.

A. *Traumatic.* The traumatic cases I have divided into those in which the injury comes from without and air is permitted to enter the abdomen through the wound, and those in which the traumatism is from within and gas is allowed to pass from intestine or lungs into the peritoneal cavity.

Of the former variety I have found one case. It appears to be well demonstrated by the author as a consequence of the entrance of air into the peritoneal cavity through a stab-wound; but his opinion is based on physical signs and not on actual post-mortem examination.

Of the second variety of traumatic tympanites there are several cases on record. Gas may escape from the intestines or stomach as a consequence of the perforation of round ulcers, of dysenteric ulcers, typhoid ulcers, secondary ulcers due to stricture, the ulcer of the cecum accompanying cecitis and appendicitis, from perforation of the vermiform appendix, from perforation the result of malignant sarcomatous ulcers, from rupture of the intestines, from a blow on the abdomen. The following case is one of interest in this connection:

A. W., aged ten years, was seized with a sudden, sharp pain in the right iliac region; the pain became general and vomiting set in. The child had not been well for one week previous to this attack. She had not had any similar attack. Dr. Rowan, her physician, found her with elevated pulse and temperature, and

diagnosed acute general peritonitis. Her father died of consumption, mother still living. Two weeks after the commencement of the illness I saw her in consultation with Dr. Rowan. The abdomen was enormously distended, tympanitic over the surface, dull in the flanks; fluctuation of fluid free in the peritoneal cavity could be made out. The child looked very ill, as if in the last stages of typhoid fever. Pulse 170, respiration 30, temperature 101°. A flatus tube was used in the intestine for the purpose of relieving what was supposed to be intestinal flatus, but no flatus passed. I concluded at the first visit that operation could do no good; seeing her again next day I decided to open the abdomen.

Operation. Incision in the median line. On incising the peritoneum a large quantity of horribly offensive gas and pus forced its way out like soda water out of a soda-water siphon. The abdomen began to go down as a balloon does when it is pricked. A two-quart pailful of pus was allowed to run out. Abdomen was then washed out with several gallons of water. There was an enormous aggregation of purulent lymph; when these "chunks" of lymph came out they looked like sponges that had been dabbled in pus. The interior of the abdomen looked like a piece of raw beef. Intestines were pressed back toward the spine; they were not distended with gas. I continued the washing until I was afraid the patient would die on the table; a drainage-tube was inserted. During the subsequent drainage of the tube little clots of blood came out from time to time. The milk, taken by the mouth, and fecal matter came out through the tube. Patient lived for two weeks after the operation, and, according to my opinion, died of starvation.

Post-mortem. I made the post-mortem examination assisted by Dr. Rowan. We found a perforation of the small intestine, and this perforation was situated near the bottom of the drainage-tube track. The rest of the parietal peritoneum was firmly fixed to the intestines and omentum, so that in reality no peritoneal cavity existed. The changes that had taken place were wonderful. No pus was to found anywhere; the only two defects seemed to be obliteration of the peritoneal cavity and a fistulous opening in the small intestine leading to the drainage-tube track and from this to the external world. We concluded that there had been an abscess in one of the mesenteric glands that had ruptured into the perito-

neal cavity and that had subsequently caused a perforation of the necrotic intestine supplied by the bloodvessels passing through that portion of the mesentery that had contained the suppurating gland. We believed this perforation to have taken place subsequent to operation, as there was no fecal matter discovered at that time and none was noticed until several days after the insertion of the drainage-tube. This explained the escape through the drainage-tube of the milk swallowed by the child.

B. *Spontaneous.* It is with the spontaneous variety, however, that I wish particularly to deal. The non-traumatic or spontaneous tympanites extra intestina I have classified in three varieties; the first, in which no liquid is to be found and in which the gas is odorless; the second, in which liquid is present and the gas may or may not be fetid; the third, in which pus is found and the gas is very fetid. I have met with one of the first and one case of the third variety. My friend, Dr. C. J. Hastings, with whom I saw the case of spontaneous, non-traumatic extra-intestinal tympanites, has furnished me with the following report:

"Mrs. P., aged twenty-three years, was confined on the 25th of March, 1895, with her first child. The labor was normal, lasted about six hours, and was conducted under strict antiseptic precautions, except that no ante-partum douche was given. On the night of her confinement her husband was ill with a severe attack of *la grippe*. Twenty-four hours after her confinement she was attacked with what seemed to be a severe attack of *la grippe*. The temperature reached 104° and the pulse 95. She had severe headache and severe pain all through the body; this was followed by suppression of the lochial discharge, which soon became offensive. Next day there was marked tenderness over the left ovary, with occasional shooting pains. Twenty-four hours later there was tenderness over the uterus, and she had all the symptoms of general pelvic inflammation. Intrauterine irrigations of bichloride of mercury were used and antipyretics administered. There being no improvement in the patient on the twelfth day, Dr. Ross saw her with me We put her on the table, thoroughly irrigated the uterus and packed it with iodoform gauze. Notwithstanding this the temperature and pulse continued high, and the next day what seemed to be general peritonitis set in. There was extreme distention and tenderness all over the abdomen. The patient could not bear to be

touched even with the tips of the fingers. On the thirteenth day the symptoms became aggravated, temperature reached 105.2°, pulse 170. Patient looked very anxious and had a pinched expression of countenance, and became cyanosed; large drops of perspiration stood out on the forehead. Everything was rejected from the stomach. By night she had slightly improved. Septic diarrhea now set in and there was a good deal of flatus passed from the bowels. A little champagne remained on the stomach. Next day the temperature had dropped to 102° and pulse to 140. For five days there was gradual improvement; temperature became almost normal and pulse came down to 100. Suddenly, however, distention became very marked.

"Dr. Ross saw the case again with me. The abdomen was extremely tympanitic; a doughy feeling could be felt on one side, and this was supposed at first to indicate a commencing phlegmon. The distention increased to such an extent that we felt satisfied the gas could not be in the intestines without producing rupture of the intestinal wall at some point. We decided to open the abdomen for the purpose of evacuating its contents, should there be gas and pus present. The skin over the abdomen very much resembled the wall of a bladder inflated with air and resounded like the head of a drum when percussed. The abdominal parietes were very thin. The measurements of the abdomen were as follows: From the anterior superior spine on one side to that on the other, twenty-nine inches; from the tip of the ensiform cartilage to the pubes, twenty-three inches. The ordinary measurements are about twelve inches from spine to spine, and ten inches from the tip of the ensiform to the pubes. Three days after the operation the patient succumbed, apparently from exhaustion from the persistent retching and vomiting. Just before death the abdomen was almost fully distended again."

Such are the notes given me by Dr. Hastings. There were two or three points to which my attention was attracted during my visits to the patient. I saw her in consultation three times. On the first visit there was something different from the ordinary case of puerperal septicemia; the abdomen was more tender to the touch than it usually is in these cases; the face did not indicate acute general peritonitis. At the second visit the respiration was very rapid; I have never seen the respiration so rapid except just at

the fatal termination of a case of acute general peritonitis. At this visit I concluded that the gas could not be in the intestinal cavity. I have never seen such enormous distention of the abdominal parietes. Feeling satisfied that the gas was not in the intestines, I advised exploratory operation, thinking that perhaps the case would resemble the case of the little girl just reported.

Operation. On Sunday, April 28, 1895, the abdomen was carefully prepared, every antiseptic and aseptic precaution being taken. Patient was placed on the table and cholroform administered; the chloroform administration was difficult. I made a small opening an inch long and very soon reached the peritoneum, owing to the thinness of the abdominal wall. I made a little puncture with a knife into the peritoneum, and the gas blew out with a hissing sound; it was sweet in odor and not indicative of any decomposition. I then enlarged the opening in the peritoneum, when the abdominal walls collapsed. The intestines were then carefully examined; they were pressed to the back of the abdomen and empty, and appeared more reddened than usual. There was no trace of accumulation of gas in them and they did not look inflamed. They were not adherent to the abdominal walls or to themselves. There was no evidence of peritonitis; there was no pus present nor any collection of serous fluid. The very dry and desiccated appearance of the peritoneum reported by some authors was not noticed in this case. The wound was dressed and a firm bandage applied. No drainage-tube was inserted.

Of the second variety, in which ascites and gas are present, I have never seen a case. Of the third classification of the non-traumatic variety, that in which fetid gas is present with pus, I have met with one case within the last week.

Mrs. K., aged twenty-six years, was admitted into one of my wards at the Toronto General Hospital on September 11, 1895. The abdomen was enormously distended, tongue red and sore, sordes on the lips, hectic flush on the cheeks. From her appearance the patient was evidently in the last stages of septicemia or else suffering from tubercular disease. The case looked like a typical case of tubercular peritonitis in an advanced stage. Fluid was found free in the abdomen, but the tympanitic note over the surface satisfied me that the mesentery must be very long to permit the intestine to float so far away from the spine, or else that there was gas

free in the peritoneal cavity. Splenic dulness was absent; liver dulness was very much diminished, almost entirely absent. I concluded, therefore, that the case was one of tympanites extra intestina with a collection of either purulent or ascitic fluid.

Operation. September 13, 1895. In the presence of several phyicians and students I opened the abdomen in the median line. As soon as the peritoneum was incised gas hissed out of the opening; a little pressure soon brought out pus. The gas was horribly offensive; the pus was of a yellowish-brown color. Something bulged out of the opening that looked like gangrenous intestine; we all thought at first that it was intestine. I found it adherent to the peritoneum and could make no road through it except in one direction. I reached up as far as possible in this direction with the finger and was puzzled to understand the exact condition present. At last I made up my mind that the gangrenous mass must be omentum and not intestine. On closer inspection I satisfied myself on this point and made an incision through the mass, when a sudden gush of pus demonstrated the exact nature of the obstruction. The omentum was adherent at its edges and hung in the fluid, having a large bulk of fluid beneath it and a small quantity of fluid on its surface. The space over the omentum, however, communicated with the space beneath it. My fingers were now passed into the abdominal cavity. The intestines were found pressed upward and backward and not distended with gas. The interior of the cavity felt like a piece of rough-grained leather. I washed it out with several gallons of water; the water used in the washing filled three large foot-baths. The condition found was exactly similar to that present in the case of traumatic pneumoperitoneum reported above, except the absence of intestinal perforation. A drainage-tube was inserted and the abdomen washed out with a solution of peroxide of hydrogen after the first twenty-four hours had elapsed.[1]

3. Tympanites intra et extra Intestines. This variety is so intermingled with the other that it is of no particular interest.

[1] After writing this paper, and two weeks after operation, a large slough came away through the unhealed abdominal incision. A week later, or three weeks after the operation, the whole omentum sloughed off and came away through the opening during irrigation. The patient is still living; the wound is almost healed; she is gaining flesh. The septic inflamed condition of the tongue has disappeared. Her temperature has become normal and her pulse has dropped below 100. There is every prospect that she will make a good recovery.

The fact that air is found in the intestines, as well as outside of the intestines in the peritoneal cavity, is not likely to affect the etiology or the treatment of the disease.

Boninsegna, after relating a case that he supposed was one of pneumo-peritoneum, though the patient recovered and no post-mortem was made, had occasion to look up the literature of this subject. He relates that Hippocrates says that he observed a collection of air in the uterus; and Giorgia found vesicles, closed and filled with gas, among the intestinal coils of umbilical hernia. Verne described a case of general emphysema following serious acute disease that terminated fatally. In this case the skin and the entire body were swollen during life. After death the general swelling of the body rapidly disappeared. No fluid ran away, but there was a noticeable and intense odor present. Morgagni described another similar case in which the swelling of the body rapidly developed in a three-year-old child who had been anointed by a woman with a very coarse and irritating ointment for the cure of scabies. All the skin was greatly swollen, elastic, and tense, with no pitting on pressure. At the post-mortem examination the swelling disappeared without the exit of a single drop of fluid. Graves wrote years ago and stated that there was a kind of pneumothorax in which the air that was found in the pleural cavity did not proceed from an external wound, or from any fistulous communication with the lungs or bronchi, or from any decomposition of liquids poured out into the pleural cavity as a consequence of pleurisy, but that proceeded from a secretion of air from the pleura itself, the effect of a subacute inflammation of that membrane.

Away back in 1755 a wonderfully accurate dissertation on this subject was written by G. G. Adolphe, entitled "De Rarissimis et Gravissimis Tympanitis extra Intestina Speciebus." The author states that, because of the rarity with which gas is found in the peritoneum alone, and the difficulty met with in attempting to account for this presence of air in the peritoneal cavity in the absence of any erosion of the intestines, this variety has been called into dispute. He considers that the gases are the result of putrefactive change, but makes no mention, however, of the form in which the gas is not fetid and in which it is not likely to be the result of putrefactive change. He met with a case himself, of which he speaks. At the autopsy fetid gas escaped in great quantity from the peritoneal cavity; the intestines were found to be

intact. There was a four months' fetus in utero. The patient had been treated for excessive dilatation of the abdomen, and died suddenly after a few days. It is probable that in his case either serum or pus was present, as, in summing up, he says that he does not believe that the condition can exist when there is no injury to the intestines, unless there is a concomitant ascites or extravasation of lymph.

Etiology. It is now fitting that we should turn our attention to the etiology of these curious conditions. Some of the conditions can be explained and some of them cannot. For many years the formation of gas in the peritoneum before death was disputed; this occurred before laparatomy was undertaken as an exploratory measure. As the inside of the abdomen was not investigated before death, it was naturally considered that the gas found post-mortem was the result of the process of post-mortem putrefaction. But it is now a well-established fact that gas is frequently found confined in various parts of the body as an accompaniment of the formation of pus. Sacculated pneumo-peritoneum is frequently found in conjunction with localized appendiceal abscesses. It is common to find air in such abscesses even when no perforation of the bowel can be discovered. To find air with pus collected in the tunica vaginalis testis must prove that this air does not necessarily come from the intestines. As in the appendiceal abscess, so in the tympanites extra intestina with pus, this gas may escape from the intestine by an almost imperceptible opening.

Since the introduction of pneumatic tires it has been frequently demonstrated that air will escape through an opening that can only be detected by submersion of the inflated rubber. It is only by means of such a crucial test that perforation of the intestine can be excluded in the cases of which we are speaking. But, in view of the report of Prof. Welch, I for one feel satisfied that the gas found in these cases does not escape from the intestine.

In 1892 Prof. Welch published a report regarding a gas-producing bacillus (bacillus aërogenes capsulatus)—a bacillus capable of rapid development in the bloodvessels after death. From the cultures made and the experiments carried out one must believe that such a bacillus exists. The experiments were very interesting. Fluid was originally obtained from a case in which there was a rapid formation of air beneath the skin after death. From this cultures were made, and fluid laden with these cultures was in-

jected into rabbits; these rabbits were killed either at once or within a few hours after the injection. Within twenty-four hours after death many of them became distended; the flesh was found to crepitate, the bloodvessels were found full of air-globules. Control experiments were performed at the same time. All of the rabbits that were inoculated and allowed to live recovered, with one exception. In this one case the rabbit died twenty-one hours after the inoculation. The body was found to be much swollen, the abdomen was distended, emphysematous crackling was felt over the abdominal parietes and also over the lower part of the thorax. Gas escaped freely from the peritoneal cavity. The uterus was found to contain two embryos that were evidently dead when the injection was made, and four that were alive at that time. Prof. Welch supposes that the bacilli were propagated in the dead fecal structures. The bacillus develops in the absence of oxygen, and, from experiments made, it is found to develop only in the presence of dead material. The gas found in many of these rabbits in the peritoneal cavity had the odor peculiar to stale glue, but it was not offensive. May not the production of gas found during life, in the case of the patient who had been recently delivered, have been due to the presence of this bacillus or some similar organism? If such gas, that is not offensive and that is not an accompaniment of pus-formation, may form in the abdomen of a rabbit as a consequence of the development of the bacillus aërogenes capsulatus in the presence of the two dead intrauterine embryos, may it not occur as a consequence of the development of the bacillus aërogenes capsulatus in the presence of a necrotic condition of uterine tissue at the placental site?

As you will see by reference to the tables, I have only been able to find records of five cases of spontaneous or non-traumatic tympanites extra intestina in which no fluid was present and in which the gas was odorless.

Godlee, whose cases will be found in the appended table, thinks the gas is allowed to escape from the intestines into the peritoneal cavity as a consequence of exosmosis. Adolphe thinks that the gas is liberated from lymph that is poured out into the peritoneal cavity; the lymph is absorbed by the vessels, but the air cannot disappear in the same manner, as, from mechanical reasons, it is incapable of entering the capillaries. This is a theory that requires careful consideration.

	Physician.	Sex.	Age	Circumstances of illness.	Physical signs.	Operation.	Post-mortem.	Result.	Remarks.
Traumatic (from without).	Thomas,	M.	22	Stab-wound right side of abdomen; healed in four days. Abdomen distended in epigastric region.	Liver dulness diminished; left lobe could not be percussed. Spleen dulness normal. Increased tympanitic sound from right lung down. Return of liver dulness after some days.	No.	No.	Recovery	Patient lived; abdominal distention disappeared. Case supposed to be one of entrance of air into peritoneal cavity as result of traumatism.
Traumatic (from within).	Schuh	M.	16	Traumatic gangrene, enteric fever, perforation of intestines.	Great abdominal distention.	Yes.	Yes.	.....	Abdomen punctured and gas removed from peritoneal cavity; became again distended before death. Pus and fetid gas found in peritoneum at post-mortem.
	Ross,	F.	13	Symptoms of general peritonitis for two weeks. Sudden onset. Tubercular history.	Fluid in peritoneal cavity. Tympanitic resonance on surfaces of fluid. Enormous distention of abdomen.	Yes.	Yes.	Died from starvation in two weeks.	At operation pus and gas flew out like soda-water under pressure. About 3 quarts of pus removed. Washed out and drained at post-mortem. Peritoneal cavity found completely obliterated by adhesions; no pus. Opening from duodenum to drainage-tube direct, through which food escaped.
Spontaneous or Non-traumatic. Odorless Gas. No Fluid.	G. Brown,	M.	21	Had been ill with typhoid fever; double pneumonia. In the third week tympanites; at first evidently intra-intestinal, later extra-intestinal. Respiration embarrassed, 50 per minute.	Extreme distention of abdomen. Hepatic and splenic dulness masked. Apex of heart displaced upward and outward.	Perforation with trocar.	No.	Death thirty-six hours after operation.	Large quantity of odorless gas escaped; no pus or intestinal contents with gas, hence excluded perforation of intestines.
	Trites,	.....	.....	Had cough; emaciated; expectorated bloody mucus; chest dull on percussion; sensation of tightness and pressure in chest.	Great abdominal distention. Tympanitic twenty-four hours before death.	No.	Yes.	.....	Pleuritic effusion. Stenosis of mitral valve. Large quantity of odorless gas in the peritoneum outside intestines. Stomach and intestines found intact.

Spontaneous or Non-traumatic. Odorless Gas. No Fluid.	Estevenet,	M.	52	Had had apoplexy and bladder trouble; became indisposed. Abdomen much enlarged and slightly painful. Respiration embarrassed, pulse somewhat accelerated. Visage altered, but not that of acute general peritonitis. Vomiting.	Abdomen reverberated like a drum in its entire extent. Abdomen looked like a leather bag inflated under strong pressure. Sternum elevated, and chin sunk so that it appeared between the shoulders in consequence of elevation of entire thorax.[1]	No.	Yes.	.....	Purgatives given with no effect. Gas escaped with noise on opening the peritoneum; abdominal walls collapsed; gas odorless; no perforation of stomach or intestines, or abrasion found; peritoneum had a desiccated appearance; no fluid, no false membrane; none of ordinary products of inflammation; intestines reddened.
	Baldinger,	.....	.....	.....	Abdomen distended like the walls of a drum.	.....	Yes.	.....	No effusion of liquid; no perforation of intestines; odorless gas.
	Ross;	F.	23	Puerperal inflammation; vomiting; patient cyanosed; embarrassed respiration; septic diarrhea; rapid pulse.	Enormous distention of abdomen. Abdomen reverberated like a drum. Skin of abdomen resembled bladder inflated with air. Liver dulness not made out.[2]	Yes.	Yes.	Death three days after operation.	Made small exploratory opening; odorless gas escaped with a hissing sound; abdominal walls collapsed; no signs of peritonitis; no pus or fluid; intestines pressed back to spine; appeared redder than usual. No gas in intestines.
Spontaneous. Gas with Acetic Fluid.	Godlee,	... ..	72	Obstruction of bowels.	Great distention of abdomen. Liver dulness almost absent.	Colotomy.	Yes.	Died in ten weeks.	At operation peritoneum found distended with gas; a little colored fluid escaped. No perforation of intestines found at autopsy.
	Godlee,	M.	46	Had had syphilis and dysentery; now has phthisis and advanced albuminoid changes.	Liver dulness absent, except on deep percussion.	No.	Yes.	.....	At post-mortem gas found in the peritoneal cavity, with ascitic fluid.
	Godlee,	F.	61	Intestinal obstruction by tumor. Severe pain, constant vomiting.	Abdominal distention.	Colotomy.	Yes.	Death in twenty-four hours	At operation peritoneal cavity found distended with gas; this was allowed to escape; colon was then found and opened. At post-mortem no operation found; evidence of old peritonitis and a recent general peritonitis; old ulcers of the cecum, but no opening through bowel found.

[1] Measurements of abdomen: Circumference at level of umbilicus, 51 inches; from symphysis pubis to tip of ensiform cartilage, 22 inches.
" " " Anterior superior spine of ilium to spine of ilium on opposite side, 29 inches; tip of ensiform cartilage to pubes, 23 inches.

	Physician.	Sex.	Age	Circumstances of illness.	Physical signs.	Operation.	Post-mortem.	Result.	Remarks.
Spontaneous. Fetid Gas. Purulent Fluid.	Ross,	F.	26	.....	Enormous distention of abdomen. Absence of splenic dulness; hepatic dulness not distinctly made out. Fluctuation; tympanitic note in epigastric and umbilical regions. Dulness in loins and rest of abdomen.	Yes.	.....	Living five weeks after operation; omentum sloughed off and came through wound.	Abdomen opened; large quantity of gas and pus found in peritoneal cavity; gas fetid. Placed in this class, as patient is still living and ultimate result not yet known.
	Breslau,	F.	28	Recently confined; discharged; returned with jaundice, cough at night; no pain; red tongue; pulse and temperature elevated; dyspnea.	Abdominal distention. Tympanites in umbilical, epigastric, hypochondriac regions. Fluctuation lower half of abdomen. Abdomen barrel-shaped	Exploratory puncture.	Yes.	Death.	Pus found at exploratory puncture; abdomen then suddenly distended, as though blown up by air. At post-mortem offensive gas and pus found in peritoneal cavity.
	Levey,	M.	25	Feeble constitution; continued diarrhea; gradual enlargement of abdomen; embarrassed respiration.	Enormous distention of abdomen.	No.	Yes.	.....	Fetid gas and greenish fluid found in peritoneum; intestines somewhat distended by gas; evidences of peritonitis; no erosion or laceration to be found.
	Marque,	F.	.....	Twin pregnancy; one child and membranes delivered; other left behind for three days; putrefaction set in; putrid gas expelled from uterus.	Abdomen greatly distended.	No.	Yes.	.....	Intestines distended; fetid gas free in peritoneal cavity.
Air-vesicles beneath Peritoneum.	Bury.	M.	64	Melanotic cancer of esophagus.	....	No.	Yes.	.....	Post-mortem: Peritoneum was studded with air-vesicles—especially the diaphragmatic portion; here they were larger and most numerous (as large as a cherry); gas odorless; no signs of decomposition; no opening detected; stomach and intestines intact.[1]

[1] One would think in this case that the air was forced down, during the act of swallowing, through some imperceptible opening beneath the peritoneum. Reported as a curiosity.

NOTE.—A case related by Boninsegna has not been included in the table, owing to the fact that there was no actual demonstration of the condition present. There was simply a surmise that it was a case of pneumo-peritoneum, and the patient recovered.

Brown is of the opinion that carbonic acid escapes through the delicate walls of the peritoneal capillaries; this he thinks is especially liable to occur in cases of imperfect aëration of the blood. In the case recorded by Brown the patient was suffering from double pneumonia following typhoid fever. It is true that in all these cases there is embarrassed respiration, and, as a consequence of the embarrassed respiration, imperfect oxidation of the blood. But I believe the embarrassed respiration occurs as a consequence of distention of the abdomen and upward pressure of the diaphragm, and that, therefore, this imperfect aëration of the blood is a consequence of the pneumo-peritoneum and not a cause of it.

Piorry, in a memoir upon the subject of the collection of gas in the peritoneal cavity, concludes that many cases occur in practice in which an opening or perforation of the intestines results from the ulceration of one or more of Peyer's patches, and in which the opening is so small that after death it is almost imperceptible.

Diagnosis. There is symmetrical distention of the abdomen, absence of hepatic and splenic dulness. If the liver is adherent to the abdominal wall, hepatic dulness may be present in ordinary tympanites intra intestina. The liver, spleen, and diaphragm are pushed upward, but lie next to the ribs and give an area of dulness.

Thomas, of Leipzig, in summing up an article on this subject, says that a tympanitic percussion sound is found over the liver when there is no respiratory disturbance in the following cases: (1) Situs transversus viscerum; (2) decrease in the size of the liver; (3) in cases in which the liver is drawn up and the diaphragm rises very high; (4) in the presence of a collection of gas between the liver and the abdominal wall, free in the peritoneal cavity.

In cases of tympanites due to the formation of gas in the intestines irregular prominences can frequently be made out. These prominences are especially frequent in cases of intestinal obstruction. In cases of tympanites extra intestina no such prominences will be noticed. The abdomen is blown out like a balloon and, as I have said before, regularly distended. Tumefaction of the abdomen is great, much greater than that seen in those cases of tympanites in which the gas is in the interior of the intestine. If gas be present both in the intestine and in the peritoneal cavity outside of the intestine, it will be difficult, if not impossible, to diagnosticate the exact condition without exploring the abdominal cavity.

In all cases of pneumo-peritoneum there is a notable tension, a drum-like tension, and a resistance of the abdominal walls. Resistance is increased, the elasticity of the walls is increased; there is absolute immobility of the abdomen during respiration, and a general elevation of the thorax. One author says that this condition is sometimes so exaggerated as to make it appear as if the head were sunk between the shoulders. Embarrassed respiration is met with as a consequence of the pressure on the under surface of the diaphragm; the tympanitic note is most marked and it has a high tone; resonance is greatly increased; the note is equally distinct and peculiar in its tone over the whole of the abdominal surface. These facts have been well pointed out by Bamburger.

The percussion-note will vary according as the pneumo-peritoneum is present with or without intraperitoneal fluid. If fluid is present, a tympanitic note will be found over the epigastric, umbilical, and hypochondriac areas, and a dull note will be found in the hypogastric region and in the loins. It is said that succussion or splashing sounds can occasionally be heard; I have been unable to discover them.

Treatment. In 1871 Piorry stated that simple puncture of the peritoneal cavity to remove gas, even in the presence of great danger of asphyxia, is not to be regarded with favor unless an accurate diagnosis of the exact condition present in the interior of the peritoneal cavity can be made. This is sound surgical doctrine, but we have passed from the days of puncture to those of exploration. Exploration by means of a knife and the finger is free from the objection that obtains in the case of a stab in the dark by a trocar. In all of these cases, I believe, an exploratory section should be performed; even if unaccompanied by any brilliant results, the patient will be relieved.

After the removal of the pressure on the diaphragm the breathing improves. Piorry mentions a case of a young man who suffered from typhoid perforation of the intestine. There was great distention of the abdomen. The abdominal wall was punctured and gas evacuated. This was done several times at intervals of two or three days. The patient survived almost a month. It must be remembered that the condition itself is only the symptom of a grave systemic disturbance, and that the relief of the symptom will not cure the systemic disturbance.

It has been stated by one operator that it is necessary in puncturing such cases to allow the gas to escape very gradually. It has been stated that the trocar employed should be very fine, so that the peritoneal cavity may be slowly emptied of gas. This is an idea that has been entirely exploded.

It is not for the purpose of opening up any new field to the operating surgeon that I bring this subject before you. I do not anticipate any great benefit to mankind from a careful study of this subject; but, nevertheless, it is a subject of great interest to the abdominal surgeon and the pathologist.

I am indebted to Dr. C. J. Hastings and Dr. R. H. Von Ezdorf for assistance in preparing this paper.

References.

1. *G. G. Adolphe:* De Rarissimis et Gravissimis Tympanitis extra intestina Speciebus. Halæ Magdeb. 1755.

2. *E. Marque:* Observation d'un cas de pneumatose péritonéale. Paris, 1875.

3. *C. F. Schultze:* De hydrope sicco ac flatulento. Vitembergu, 1713.

4. *Boninsegna:* Un caso di pneumatosi peritoneale spontanei. Gior. di. med. mil. Ferenze, 1872, xx. pp. 289–298.

5. *A. Cantani:* Gulle pneumatosi spontanei con exposizione particulare delle pneumacisti, dell' addoner. Morgagni, Napoli, 1897, ix. 233, 317, 389, 483.

6. *Estevenet:* Observation d'accumulation de gaz dans la cavité du péritoine; mort par l'asphyxie causée par la compression des pournes de bas en haut. J. de Méd. et Chir. de Toulone, 1855, vii. pp. 129–133.

7. *Labalbary:* Cas remarquable de tympanite péritonéale. Gaz. de Hôp. Paris, 1860, xxxiii. p. 514; 1861, xxxiv. p. 415; also Bull. Acad. de Méd. Paris, 1870, xxxv. pp. 856–859.

8. *R. J. Godlee:* Three Cases of Gas in the Peritoneal Cavity. Tr. Clin. Soc. Lond., 1877, x. pp. 115–117.

9. *M. Levy:* Note sur un cas de tympanite péritonéale. Gaz. méd. de Paris, 1848, 3 s., iii., p. 791.

10. *L. de Martiartu:* Nouveaux documents sur la pénétration de l'air dans la cavité du péritoine à travers la matrice et les trampes. Gaz. méd. de Paris, 1857, 3 s., xii. pp. 172–174.

11. *Piorry:* Memoir relatif, soit aux collections de gaz contenu dans les cavités abdominales (gaz gastrasie, enterossie péritonasie varietés, des la tympanite des auteurs), soit à la ponction du ventre pratiquers dans l'intention d'evacuet les fluides elastiques. Union méd. Paris, 1871, 3 s., xii. 873, 898.

12. *G. F. Bury:* Emphysema of the Peritoneum found in a Man who Died of Melanosis of the Esophagus. Tr. Path. Soc. Lond., 1866–67, xviii. p. 107.

13. *W. B. Trites:* Gas in the Peritoneal Cavity; a Clinical Case. Hahnemann Monthly, Phila., 1880, ii. pp. 413–415.

14. *Brelau:* Ein ausgezeichneter Fall freier Gasentwicklung aus eiterigem peritonäal Exsudate. Wien. med. Wochenschr., 1863, xiii. pp. 177, 193.

15. *Schuh:* Ueber die Diagnose der Tympanites Peritonæi und die in dieser Krankheit vorzunehmende Punction. Med. Jahr. d, K.K. oester. Staates, Wien. 1842, xxxviii. pp. 6–13.

16. *Thomas:* Ein Fall Genesung bei Lufteintritt in die peritonäal Hohle mit diagnostischen Bemerkungen. Arch. d. Heilk., Leipz. 1865, vi. pp. 88–91.

DISCUSSION.

Dr. James F. Baldwin, of Columbus.—I desire to say a word or two in regard to the etiology of this affection along the line which the author mentions, with reference to the investigations made at the Johns Hopkins University some three years ago. About a year before that time I was asked by my friend, Dr. E. J. Wilson, of Columbus, to assist him to remove a uterine polypus. It was about as large as my two fists. I gave the anesthetic while the doctor used the instruments. The case was an ordinary one of that character, there being nothing peculiar about it whatever. He manipulated it until he had nearly severed the pedicle, when he decided to leave it and give ergot to see if the mass thus partially severed would not be expelled. This was about noon. The patient rallied from the anesthetic, was very comfortable, retired for the night at the usual time and directed her relatives to retire also. About 1 o'clock in the morning, however, she died. Almost immediately after death it was noticed that her body was swelling rapidly. An undertaker was called, and used his ordinary injections to embalm the body, but without avail, so that when I saw her with the doctor, who had arranged in the meantime for an autopsy, the body was swollen beyond recognition. An incision being made in the median line, as usual, gas escaped. There was free gas also in the peritoneal cavity. We supposed it was simply rapid decomposition, and so we made no investigations similar to those which were carried on later at the Johns Hopkins Hospital. I do not know how thoroughly the doctor disinfected the uterus and instruments, but I know that he is a careful man, and presume that he had sterilized them after the usual method, and that his hands were also carefully sterilized before proceeding to the operation.

About a year after this I read with great interest this report from the Johns Hopkins Hospital. A year subsequently I was called to see a case in consultation. The patient was already dead. Her abdomen was also distended with gas, the distention coming on before her death. They had noticed crepitation over a large portion of the abdominal surface before she died. This woman had had an abortion produced by an abortionist of the city in which she lived. I told them at once what I suspected was the cause of the trouble. In making the post-mortem, blood was drawn from the femoral vein for bacteriological examination. On opening the abdomen gas escaped, as in the preceding case, and on applying a match to it it puffed up as hydrogen gas explodes. It also burned with the peculiar flame of hydrogen. The

uterus contained a little débris, such as we would expect to find following an abortion. The uterine veins and sinuses contained this peculiar gas. I turned the fluid over to Dr. Graham, a bacteriologist in our city, and he conducted experiments similar to those conducted by the Johns Hopkins Hospital, and with the same results. We secured a sufficient quantity for analysis, and it was determined to be pure hydrogen, and nothing else. This case, with that reported by the Johns Hopkins people, were the first cases in which this gas was found in the veins, but many cases are to be found in literature where death has occurred and "air" has been found in the veins.

I remember one case, in which a doctor in producing an abortion undertook to do so by injecting water into the uterus. The patient died, and a few hours later a post-mortem was made, which revealed that air was in the veins, and it was supposed that some of the fluid injected had entered the sinuses carrying air, as the work was done by a syringe. I think such cases were really due to the presence of the peculiar bacillus in the veins, but how it gets there I do not know. In the Johns Hopkins case, you will remember, the patient was one with aneurism of the thoracic aorta that had practically perforated, so that there was oozing of blood at that point. The patient died from exhaustion incidental to hemorrhage, and there was developed the condition I have described after death. The only case in which this gas was noticed before death was the one I have alluded to as occurring in Columbus.

Dr. William B. Jones, of Rochester (by invitation).—I saw a case of pneumo-peritoneum last spring in connection with appendicitis.

The patient, J. P., aged about forty years, had severe colicky pains during the night of May 18, 1895, with obstinate constipation. About noon, May 19th, abdomen became tympanitic; toward night incessant vomiting of dark fluid began. Operation at 3 P.M., May 20th, disclosed parietes widely separated from the collapsed intestines by inodorous gas; no general peritonitis. Gangrenous appendicitis with scarcely any adhesions and about one drachm of sero-pus; no perforation. The patient rallied a little, but died thirty hours later of exhaustion. The temperature was never above normal, most of the time one-half to one and a half degrees below.

THE PREVENTION OF PELVIC INFLAMMATION IN WOMEN.

By RUFUS B. HALL, A.M., M.D.,
CINCINNATI.

Pelvic inflammation in women, with all its attendant evils, accompanied by the greatest suffering, ending only on the operating table or possibly in death, is a disease that in a very large percentage of cases is preventable. This is a delicate subject to handle, and one which has not been much talked about outside of the profession. The time has arrived when it, with all its attendant evils, should be thoroughly discussed in a society like this, and through this Association reach the medical profession at large. It is not necessary to say, in the presence of men engaged in this special work, that the operations necessary for the relief of suffering and saving of life in patients with pelvic inflammation are severe and attended with immediate and remote dangers to life. While the percentage of recoveries from these operations is something truly marvelous even to men engaged in this work, there must always be a mortality attending it. This is not all that might be said. Worse even than death, in many cases, is the knowledge on the part of the patient that she is maimed for all time and that she can never be a mother. Again, many of these patients, after submitting to the operation which all will grant was necessary to relieve suffering and save life, are invalids for months afterward. Not a few require years of time before their nervous systems readjust themselves to the point where the physician can declare that they are restored to health.

One of the most common causes of pelvic inflammation in women is septic infection following abortion. A septic endometritis following an abortion is not always cured when the patient is able to leave her bed. In a certain per cent. of cases thus infected, after months of comparative health, in which the patient is so near

well that she thinks it is only a matter of a few weeks until she is restored to perfect health, she commences to suffer with vague pains in the pelvis and slight backache, and she applies to her physician for relief from these pains and from the slight leucorrheal discharge. Upon examination it is plainly evident that the patient has a salpingitis which may go on to suppuration notwithstanding his well-directed treatment. A large percentage of cases suffering from septic endometritis have a salpingitis following it. A. Martin puts the number at 48 per cent. of all cases. It is very easy to understand why this should be so, when we know that in all cases the inflammation extends along the tube by continuity. When the inflammation has once reached the fimbriæ and the ovary, the peritoneal surfaces become agglutinated. In some instances the tube becomes fixed to the ovary, thus causing that organ to be subsequently infected, with suppuration of the ovary complicating that of the tube. In others the tube becomes sealed by plastic exudation and adhesion, shutting it off as a closed sac, and suppuration goes on until relieved by surgical measures. Just how many of these cases eventually come to the operating table for relief I am unable to say. In a large per cent. of cases where the disease stops short of suppuration the tube is adherent to the adjacent parts or the ovary is bound down by adhesions, and the patient remains sterile. And in not a few instances the patient remains a semi-invalid the rest of her menstrual life. If we could have the correct statistics of the frequency of self-induced abortion in married women I am convinced that we would be as much astounded as we were when Noeggerath first announced his conclusions regarding gonorrhea. We shall not enter into a discussion of the motives assigned as the cause of the abortion, for various reasons. But that this has always been a crime which was frequently committed, and one that appears to be on the increase, the medical profession knows too well.

Another very common cause of pelvic inflammation is gonorrhea. We all know that a very large per cent. of women, outside of houses of prostitution, who suffer from gonorrhea, contract it from their husbands. I have not seen any statistics worth quoting which would guide us to any definite conclusion as to its frequency in men. Every physician in our large cities knows it is one of the most common ailments among men before marriage. We must, therefore, rest satisfied for the present with looking at the views of

others. Noeggerath, when speaking of it, says: "I do not know what the state of matters is in other cities; I did not know how we stood in New York until I questioned the husband of every woman who came under my treatment. I believe we may apply here the dictum of Ricord that in every thousand men eight hundred have had gonorrhea." Again he says: "I believe I do not go beyond the mark when I assert that gonorrhea in 90 per cent. of the cases remains uncured." In another place he says "that of every hundred women who have married men formerly affected with gonorrhea, scarcely ten remain healthy; the others suffer from some of the ailments directly attributable to this disease." These observations were made by Noeggerath in 1872, and have been much derided by the medical profession, but they were the result of his work, largely clinical, in a large city, among the poorer classes. I do not believe the disease is anything like as frequent throughout the country as his statistics indicate. But since the discovery of the gonococcus by Neisser in 1879 a great number of gynecologists have investigated the frequency with which the diseases of gonorrheal origin occur in their patients. Strange as it may seem, the results strongly support the statements of Noeggerath.

After a woman is once infected the case follows one of two courses—a rapid course ending in suppuration in a few days or weeks, which is rare; the more common course is months and years of semi-invalidism, suffering great pain during the menstrual week, and ending finally in suppuration, necessitating one of the gravest operations in surgery. All of you know full well the dangers attending these operations, and it is not necessary to recapitulate them here.

It is not possible to give the mortality directly due to these causes, but it is certain that not a few women die from pelvic inflammation without operation. We also know that the death-rate following these operations is as high if not higher than any other class of operations in abdominal surgery.

As intimated before, this is not the only objection to the operation. Many times in my experience have I had the patient say to me, and I believe truthfully, that she would rather die than get well and know that forever after she was a maimed woman. Especially is this true of those women who have never borne children.

Of the great number of abdominal sections made today in this country, fully 25 per cent., if not more, are directly due to these preventable causes. If this be true, it is high time for the profession to make renewed efforts for their prevention. You will ask how this is to be accomplished. I have not formulated a plan, further than to say that the work must be done by the medical profession. If a society like this indorses these sentiments, it will exert a great influence upon the profession at large, and it will not be long until it bears fruit. The family physician must be the educator in this direction. Women should be told the dangers from septic infection following abortion. We, as a profession, have tried to prevent abortions by appealing to woman's higher nature, by holding up before her the enormous crime of killing the unborn child, but we have failed to stop the practice. We should appeal to her selfish nature as well, and tell her plainly of the danger to her own health. I am convinced from personal experience that but a small percentage of women have the remotest idea that there is any danger from an abortion before the third month of pregnancy. We, as physicians, know that it is from abortion in the early months that the patient incurs the greatest risk of septic infection. Our duty is plain here to educate women upon this point, and no false modesty should prevent the family physician from imparting knowledge, upon all legitimate occasions, upon this subject.

Again, the family physician should impart knowledge upon every legitimate occasion upon the subject of gonorrheal infection. He should instruct the parents of boys, and the young men themselves, of the great danger to the health of their future wives should they contract gonorrhea. When we appreciate the fact of the great delicacy and hesitancy on the part of parents in talking about these subjects to their sons, we begin to realize what an enormous subject we have before us. But it is a just and righteous one, and one that is bound to be thoroughly aired by the laity in the near future. The sooner the medical profession does its plain and whole duty in the matter, the better for us all. It is within the recollection of the majority of my hearers when we, as college students, were taught that gonorrhea amounted to but little more than a cold, and could be cured in nine days by a little balsam of copaiba and a mild astringent wash. We need not wonder at the position the

laity take on the subject. These older teachings must be revised, and the laity must receive instructions through the family physician. We should teach that gonorrhea is more destructive to woman than syphilis.

While on this subject we must not forget the duty parents owe their daughters as well. As sure as time, when the laity become educated upon this point, the parents and guardians of young girls will be as careful to inquire after the moral and social character of their daughters' suitors as they are now wont to do about the size of their pocketbooks. The former I think the more important, both as to comfort and happiness of the girls.

When the laity become educated upon this subject as the profession now understands it, the abdominal surgeon will make fewer sections for these preventable diseases than he is now doing, and a corresponding amount of misery and death will have been prevented.

DISCUSSION.

Dr. Herman E. Hayd, of Buffalo.—Mr. President: I want to put myself on record as opposed to the views of Noeggerath. I realize the terrible dangers and responsibilities that young men assume when they undertake matrimony who have been the subjects of gonorrhea, but I wish to offer my most strenuous objection to the statement that 90 per cent. of the diseases of women that we encounter in our daily practice are due to neglected gonorrhea. Were it as general as he maintains, we would not only have this whole country decimated, but nearly every woman would have pus-tubes. There are other reasons for diseases in women, and the more I think of it the more I am impressed with the necessity of our educating women that they have other duties to perform than the prevention of conception and the lessening of families. We do not see the large families we used to have in olden times, and what is the result? Preventive measures of every beastly description are instituted, and many of our homes are converted into mere brothels, and everything imaginable is done to lessen the size of families. Cordelia was proud of her twelve children, and said: "These are my jewels." That is the kind of women we want nowadays. Yes, mothers and fathers whose daughters are to be given in marriage cannot be too particular and might well inquire into the deep urethra of

the prospective son-in-law, because there are decided dangers associated with latent gonorrhœa; but, at the same time, I want to express myself as forcibly as possible to the effect that the prevention of conception, criminal abortion, careless gynecological manipulations in doctors' offices, and careless midwifery, are responsible for more diseased tubes and ovaries than husbands who had gonorrhea some years antedating marriage, as Noeggerath's article would make us believe.

Dr. H. W. Longyear, of Detroit.—I do not like to have this matter of gonorrheal infection belittled. I do not care whether it is 90 per cent. or 60 per cent. I believe gonorrhea is responsible for more pus-tubes than all other causes by a large percentage.

Dr. Hayd.—Can you prove it?

Dr. Longyear.—Yes; the records of my cases will prove it. I keep a careful record, and try to get correct histories of my cases, and I know what I say is true. I would not belittle the other matter that Dr. Hayd referred to, namely, meddlesome gynecology, and also the infection from abortions. If you get careful histories of the cases of infection from abortion, you will find that a great many of such cases are due to gonorrheal infection as well—lots of them.

I think the points laid down by the author of the paper are sound advice for parents. I read a paper before the Michigan State Medical Society several years ago on this subject, in which I recommended that after a certain age the male pupils in the public schools should be taught the dangers of this disease, inasmuch as parents will not do it. If such instruction were given in our public schools we would get at the pith of the matter. At present gonorrhea is usually contracted on account of the ignorance of its true nature.

Dr. J. Henry Carstens, of Detroit.—I have seen a great many cases of pus-tubes from time to time. I do a few operations, probably one hundred and fifty sections a year, and from my experience I do not find quite as many gonorrheal pus-tubes as puerperal pus-tubes. I have nearly all my cases examined bacteriologically, and I must say there are more cases of pus-tubes caused by infection from miscarriages or infection after labor than there are from gonorrhea; and still there is no doubt that gonorrhea is a fruitful source of infection, but by no means an only one; nor even does it account for the majority in my observations.

Dr. B. M. Hypes, of St. Louis.—I want to insist that many of the cases mentioned here of infected tubes and of other septic conditions following parturition are not always due to bad midwifery or carelessness on the part of the medical attendant. We all know that from 5 to 20 per cent. of newborn infants suffer with ophthalmia neonatorum

unless prophylactic treatment is employed; and that this eye infection results in nowise from the accoucheur. Where does it come from? It arises from a septic condition of the birth-canal which existed prior to and during labor. If so large a percentage of children is thus affected, how many mothers are impregnated in like manner, through fresh lacerations and the large trauma where the placenta was attached? Could we in all cases trace the origin of puerperal sepsis I have no doubt that we would find a certain, though small, proportion of what has been termed "auto-infection" cases; this infection, too often originating from an acute or perhaps latent gonorrhea in the husband. While I believe that puerperal sepsis is generally the result of carelessness and want of cleanliness on the part of the attending physician, I desire to emphasize the fact that it may have some other origin, and that he is not in every case to be blamed.

Dr. William B. Jones, of Rochester.—We have a society of conscientious Christian women who are endeavoring to enforce social purity and social equality. Let me say that if this Association or the author of the paper would present these facts to the proper authority they could be disseminated through that organization, and our sons and daughters would be instructed in the dangers of marrying men or women who have had gonorrhea.

One word in defence of the young man. If the bride is infected or has been, the responsibility is not always with the bridegroom. We do not always know when it occurred. I think the trend of the remarks is to throw the responsibility upon the boy who has sowed his wild oats. The boys are not always to blame in the matter.

Dr. Hall.—The boys are to blame in a larger measure than we give them credit for. I have investigated this matter of gonorrheal infection, and, without going into details, let us take the case illustrated by Dr. Miller, and how frequently do we as gynecologists see such cases. Take a young married woman. What else can you attribute her gonorrheal infection to than that she contracted the disease from her husband? I think fully 10 per cent. of the cases of gonorrheal infection lead to suppurating pus-tubes and ovaries.

Dr. Carstens.—Do you not think the excitement of married life, coition, the travelling, being away from home, insufficient clothing, etc., have a great deal to do with bringing about congestion, inflammation, and interference with the circulation, which favors the development of microbes in the vagina, and which we will find in the purest of women?

Dr. Miller.—Possibly. But unquestionably the husband infects his wife, his attack of gonorrhea dating perhaps many years back.

There is very little doubt that latent gonorrhea in the male will cause acute gonorrhea in the female.

Dr. Hall (closing the discussion).—In the case I refer to, that goes on to repeated attacks of pelvic inflammation, I will say no in answer to Dr. Carstens's question. If, however, the woman has repeated attacks of pelvic inflammation which lead to suppuration, I should say that if the husband had gonorrhea twenty years ago he has a deep urethral stricture or tender point, and that if he drinks beer or wine the tenderness is enhanced on urination. He has latent gonorrhea and his wife is in danger of acute gonorrhea.

I only took up the two great subjects of septic infection following retained membranes, and gonorrheal infection, because the whole field was too large to cover in a short paper. In case we do not find the gonococcus, it does not prove that the original attack of ten years ago was not due to this microbe—not in the least. The gonococcus may have started the inflammation, leads to repeated attacks of inflammatory trouble, to occlusion of the tube, and the secretion may be retained in the tube. There may be an accumulation of menstrual fluid which is sealed up, followed by repeated attacks of inflammation until suppuration sets in, just as in any other part of the body. The gonococcus may not be found now, but it was there when her trouble commenced.

LARGE HYDRONEPHROTIC CYST SIMULATING OVARIAN TUMOR; ABDOMINAL NEPHRECTOMY; RECOVERY.

By HERMAN E. HAYD, M.D.,
BUFFALO.

It has been well said that the abdomen is the "terra incognita," and no doubt it will ever remain so, full of mystery, speculation, and uncertainty. Thanks, however, to the labors of Lawson Tait, doubt associated with danger need not long imperil the life and safety of the individual, since exploratory incision is now recognized as a scientific surgical procedure.

Cysts of the kidney, like benign growths of other organs, are often very insidious in their development and reach enormous proportions without causing any very great pain or distress. These cysts may either form in the kidney substance and a number of them coalesce and thus make a cavity of considerable size; or, from mechanical obstruction in the ureter, the pelvis and calices of the kidney may be greatly distended with urine and pus, and form those well-known pathological conditions, hydronephrosis and pyonephrosis. The hydronephrotic kidney presents a very interesting appearance, as is beautifully demonstrated in the specimen I show you. It is lobulated from the numerous sacs on its surface. Its cortical substance has disappeared, and simply the capsule remains as the covering of the cyst wall. The medullary substance with its pyramids has been scooped out by the gradually distending calices, infundibula, and pelvis; and the several sacs or lobules are separated from one another by thin septa which are the remnants of the original cortical prolongations between the pyramids. The greatest distention has taken place in the hilum and pelvis, as this is the most elastic and distensible area. In exceptional cases the organ becomes so dilated that it fills the abdominal cavity and makes

it almost impossible to differentiate between it and an ovarian tumor. The urinary symptoms may be quite negative, as the other kidney, if healthy, supplements the functions of the diseased organ and is capable of secreting a large amount of healthy urine.

Even the microscope helps us but very little in many of these cases —in fact, the kidney disease is not suspected, and consequently the cystoscope, which could clear up the diagnosis, is not thought of. Of course, had our suspicions been called to this kidney a cystoscopic examination would have shown us that through one ureteral opening urine entered the bladder, and not through the other, and thus a diagnosis might have been established.

The case I beg to present has the following history:

Mrs. B., aged fifty-eight years; a strong, thick-set woman of Irish extraction; married, and the mother of nine children, the youngest ten years of age.

I was called to see the patient on January 11, 1895, and found her suffering with pain in the right lumbar and iliac regions. Temperature 101°, pulse 86. She had always been well and strong; in fact, had not been sick a day in years. A few weeks previous to this illness one of her sons was very sick with pleuro-pneumonia. She nursed him through the attack and made no complaint whatsoever.

Upon examination I was surprised to find the abdomen very much distended by a large cystic tumor. She had herself noticed that she was getting very fat, but, as this increase in size was not accompanied with pain, she gave the matter no further thought.

The tumor filled up the whole right side and extended some inches to the left of the umbilicus. The percussion wave was well marked even into the left lumbar and iliac regions, and the dulness general except in the left side and flank. The uterus was quite movable, and the right vaginal vault was flattened by the fluctuating mass. A diagnosis was made of right ovarian tumor with considerable adhesions to the abdominal wall. The urine was collected for twenty-four hours, and there were voided forty-two ounces of a pale, straw-colored fluid with specific gravity of 1022, acid, no albumin, and no sugar.

The patient was taken to the Woman's Hospital, and on the morning of the 14th, after suitable preparation, the abdomen was opened. Dr. Frederick assisted me.

After entering the peritoneal cavity it was evident that the tumor which presented in the line of incision was extraperitoneal. The incision was, however, enlarged and extended above the umbilicus, and the dimensions and bearings of the tumor carefully studied. It was decided that we were dealing with a huge kidney cyst, and, instead of closing the incision and attacking the kidney through the loin, we should proceed to enucleate it at once. The omentum and bowels were pulled out of the wound and protected by hot towels, and a slit was made through the stretched transverse mesocolon. The cyst wall, which was as thin as tissue-paper, broke upon the slightest manipulation and flooded the whole peritoneal cavity with a thin, yellowish fluid—I should say several quarts—with a decidedly urinous odor. It contained some yellowish flakes.

The fingers were then passed between the cyst wall and the abdominal parietes, and the tumor was with considerable difficulty separated and tied off. The stump was divided into three sections and tied with catgut. The hemorrhage was very slight and but few bloodvessels needed any special attention. The ureter was dilated and funnel-shaped, and pervious for some inches, where an obstruction was felt. However, no stone or concretion of any kind was found. The peritoneal cavity and the excavation, where the tumor existed, were thouroughly flushed with several gallons of warm sterilized water, a counter-opening in the loin was made and a rubber drainage-tube inserted.

The edges of the incised mesocolon were brought together with catgut and thus the peritoneal cavity was closed. The future progress of the case was like any extraperitoneal operation. The abdominal incision was closed with silkworm-gut, and a glass drainage-tube was well placed behind the uterus.

The glass tube was drained as often as there was any indication —at first every fifteen minutes, then the intervals were prolonged; and on the following morning at 7.30 o'clock it was removed. The patient rested comfortably between the intervals of drainage, had little or no nausea, and felt fairly comfortable.

Six hours after operation she was catheterized. Eight ounces of urine were obtained, and in four hours—10.30 P.M.—eight ounces more were voided; at 1 o'clock A.M., three ounces; at 3 A.M., three ounces; and at 7 A.M., three ounces—making in all twenty-five ounces from 11 o'clock, the hour of operation, to 7 A.M. the

following morning. Pulse 100, temperature 99⅗°. Five grains of calomel and five grains of soda were given, and at 12.30 a Seidlitz powder, when the bowels were moved very satisfactorily.

On the fourth day the temperature ran up to 102°, but on the following morning it fell to 100°, and on the sixth day it was 98½°. The stitches were removed on the eighth day, and the wound had healed kindly throughout. There was some oozing, although comparatively little, through the posterior opening, and the dressings were changed every four days.

All went well until the thirteenth day, when the temperature went up to 103½°, and pus welled through the tube—evidently due to some infection in careless dressing. The cavity was then frequently irrigated, and after a couple of weeks the discharge ceased and the sinus closed.

The patient was removed to her home, after having been in the hospital five weeks. The temperature had been normal night and morning for some days.

The second day after the operation there were collected thirty-two ounces of urine—specific gravity 1022, acid, no albumin, no sugar. The bowels had moved a number of times, and daily evacuations took place from now henceforth. The urine averaged from thirty-two to forty ounces per diem.

She did well at home for three weeks, was up and about, and ate heartily and slept well. On one of our bitterly-cold February mornings she carelessly stood in the door only half-clad and took cold. I was sent for in a few days and found the chest full of bronchitic râles, with some fever and increased pulse. On the following day acute pulmonary edema had set in, and she died seven hours after my morning visit.

The case is interesting : First, on account of the huge size of the hydronephrotic cyst, as well as the absence of pain or distress in its formation. Second, the obscurity of diagnosis, or, at all events, the simulation of this cyst with ovarian tumor. Third, the increased functional activity of the one kidney—in fact, its ability to vicariously functionate for the other organ. Fourth, the ease and facility with which the tumor was removed *per abdomenem*, and the uninterrupted convalescence for thirteen days. I am satisfied that the patient would have been thoroughly well in three weeks had the posterior opening not been infected in some way, and

I am inclined to believe the patient herself infected the wound by scratching it with her fingers, as she was very wilful and unmanageable. Fifth, at no time was albumin found in the urine, and quantitatively and qualitatively the secretion of urine was above the average; at one testing she passed two hundred and eighty-seven grains of urea in twenty-four hours. And last, but not least, the etiology of this interesting condition. There was no evidence of stone or symptoms of previous ureteritis.

DISCUSSION.

Dr. William Wotkyns Seymour, of Troy.—Mr. President: In connection with the excellent paper presented by Dr. Hayd I desire to report a case in which a diagnosis of ovarian cyst was made, and even today I am not certain as to what the ultimate diagnosis was. I will briefly recall the points in the history of the case. The patient had in the previous February been confined of a living child, shortly after which the abdomen began to increase rapidly in size, so much so that during the first week in May she was sent to a hospital, where a diagnosis of multilocular ovarian cyst was made. And at this time the abdomen measured some forty inches in girth at the umbilicus. On either side of the median line there were two fluctuating bosses. The uterus was not particularly enlarged, was freely movable, and through the vagina a mass quite as hard as an ordinary fibroid was felt. The universal opinion was that we had to deal with an ovarian cyst, and two or three days later I was prepared to operate on the patient in my clinic. Imagine my surprise, when, on opening the abdomen by a four-inch median incision, I found beneath my incision the descending colon passing between these two large fluctuating bosses, which we felt beneath the abdominal wall before operation. The peritoneal covering was filled with large vessels, such as I have only seen in cases of malignant disease of the kidney, one of which I was so unfortunate at one time as to remove, with a fatal result. After a thorough examination of the abdomen, with my hand and forearm introduced through the wound into the pelvic cavity beneath, the hard mass was felt which had been felt through the vagina and rectum, and found to be continuous with the kidney. I told the gentlemen present that I had to deal undoubtedly with a case of malignant disease of the kidney.

I closed the wound by interrupted catgut sutures; there was no rise

in temperature, and the patient had a perfectly normal convalescence for about ten days, when the temperature arose to 104°, and so continued for a week or more, then subsided to normal. The woman left the hospital, having been told that nothing more could be done for her. Imagine my surprise when later I learned that the growth had entirely disappeared. There was no history of any sudden discharge of fluid from the bladder, and I could learn of none from the bowel. She fell into the hands of an irregular practitioner who claimed to have cured her by medical means. The woman at present is in good health.

Dr. L. H. Dunning, of Indianapolis.—I would ask the author of the paper how long the stricture was in the ureter and whether it was impermeable or not?

Dr. Hayd.—There was some injury to the upper portion of the ureter, and through the stricture it was impossible to pass the smallest sized probe. That was the point I wish to bring out in the discussion as to the cause of the stricture.

Dr. Dunning.—The case is an interesting one, and brings up points in connection with kidney surgery. I had the misfortune a few years ago to meet with a similar instance in my own practice. I believe, in listening to the reading of the history of a case of this sort and the results of so brilliant an operation as this, that we are apt to be misled in doing something which would not be for the best interest of the patient. We may put it down as a rule that in all cases of hydronephrosis a thorough diagnosis should be made before the posterior layer of the peritoneum is opened. It would be better to open. It would be better to open the hydronephrosis behind and explore the ureter before we proceed to extirpate the organ, for the reason that we find, after a short time of drainage of the pelvis of the kidney, what appears to be an impermeable stricture of the ureter very soon becomes permeable, and we may save the organ. Now, it is quite apparent that in this case the organ was not so far diseased as not to functionate. I believe in nearly all cases of hydronephrosis the secreting power of the kidney, if there is any suppuration going on, is diminished. If we have a case of hydronephrosis and have opened the abdomen under a mistaken diagnosis, I believe it is a proper procedure to make a counter-opening in the groin, open the pelvis of the kidney in order to secure free drainage for a given length of time, with the hope that the stricture may be passed by a bougie, either from below upward or from above downward, and thus save this important organ.

The work done by Kelly and Fenger has opened up to us a wide field in conservative surgery. I hope I may not be understood as

criticising Dr. Hayd in any way, for his operation was certainly a brilliant one, and was followed by a very successful result.

There is one point of great interest to us, and it is this, that notwithstanding the fact that the abdomen was flooded with a large quantity of urine, yet there was no evidence of infection of the abdominal cavity by the urine. There was no suppurative process going on within the kidney or within the cyst. This encourages us to hope that in many such cases we may save this important organ. I have removed the kidney five times for various diseases, but in the present light of our knowledge I would not resort to that procedure again in case of sarcoma of the kidney in children, or in hydronephrosis, until an effort had been made to connect the pelvis of the kidney with a permeable portion of the ureter, or an effort had been made to open and dilate the structure with bougies, either through the pelvis of the kidney or by passing it from the bladder upward.

My case of hydronephrosis in which I extirpated the kidney, the ureter was impervious for one and three-quarter inches. We did not determine that until after the operation. I made an error in diagnosis when I should not have done so. Since that time I have met with four or five large tumors of the kidney where the diagnoses were easily made, and it should have been made in this case. You will remember these kidney tumors begin from above and extend downward. In tumors of the kidney there is an area of resonance on percussion over the front of it extending a greater or less distance. The tumor rested behind the intestines, and the colon overlapped the tumor in every case I have seen. In one case, a child, five years old, the tumor weighed five pounds. It was easy to make a diagnosis in this case on account of the overlapping colon and the overriding of the small intestines with fixation of the organ. If we carefully observe these points, it is not often we will make a mistake.

Dr. Seymour.—In the case I narrated, although the descending colon came upon the whole front of the tumor, there was absolutely no tympanitic resonance in front of it.

Dr. B. M. Hypes, of St. Louis.—Cases of hydronephrosis are frequently congenital. I had an interesting experience in the case of a child, a breech presentation. There was dystocia, and extreme traction failed to lower the child. Upon the insertion of the hand into the uterus I found that the abdomen of the child was enormously distended, so much so that it could not pass through the pelvic canal. I took a bistoury and opened the abdomen, expecting to eviscerate the contents. All at once there was a gush of water from the abdomen of the fetus. Afterward the child was easily delivered. The post-mortem examina-

tion showed that I had a case of hydronephrosis to deal with. These cases are often congenital; occasionally they gradually develop and only give trouble in after years.

Dr. James H. Dunn, of Minneapolis.—In regard to the diagnosis of renal tumors, I believe in one or two instances mentioned here the colon was said to be empty, or that a gurgling sound was not heard over the tumor. In tumors of the kidney the colon is at times empty, and hence not resonant, and if we are not guarded we are apt to lose sight of a valuable diagnostic symptom. In some cases I have in mind by repeated examinations we were able to make this symptom out. In one or two instances the patient called attention to the fact of a gurgling occasionally taking place over the tumor. I think we should always inquire into this point and ascertain by repeated examinations, or in default of such opportunity, inflate the colon. Certain it is that the relation of the colon to these tumors may always be made out, a point of great diagnostic worth, but sometimes of still greater value in choosing the proper primary incision.

Dr. Rufus B. Hall, of Cincinnati.—The fact that the colon is in front is a very important point in the differential diagnosis in cases of hydronephrosis. By taking an ordinary Davidson syringe, introducing the nozzle and pumping a few bubbles of air and distending the colon, you can settle that point in the diagnosis as to whether the colon is behind or in front of the tumor in a very few moments certainly and positively.

Dr. J. Henry Carstens, of Detroit.—I saw and operated on a case of hydronephrosis last week that was diagnosticated by a very able practitioner as an ovarian tumor, and I merely want to say it is easy to make a mistake of this kind. The peculiarity of that case was put on record. The other kidney had evidently become loose and was floating around in the abdomen, so I operated on this side, taking out the hydronephrotic kidney, then stitched the other kidney up. It will give the woman temporary relief. I simply mention this case to show what things we sometimes encounter. It is not easy to make a diagnosis of an ovarian or a fibroid tumor, for it may turn out to be a sarcomatous tumor.

Dr. Hayd (closing the discussion).—In operating on this case, I assure you I had no idea that I was dealing with a hydronephrotic cyst, inasmuch as it so closely simulated an ovarian tumor; and it seems to me that most men would have made the same mistake, because there were no symptoms whatever that pointed to the possibility of kidney trouble. The patient was passing a good amount of urine and of normal specific gravity. There was no albumin in the urine and no sugar. I pre-

sented the case in the hope that any of you when dealing with a large cyst in the abdomen will bear in mind the possibility of having a nephrotic cyst instead of an ovarian.

In answer to Dr. Dunning, there is no question in my mind, when a diagnosis can be made, about the value of the posterior incision, and it should ordinarily be the one through which to remove the kidney, and perhaps some men would have done so even in this case. They would have closed the front incision and gone in through the rear, and, if possible, would have delivered the tumor from the back. We discussed the situation and made up our minds, owing to the great distention of the abdominal cavity, and the fact that the peritoneum was so thinned out, that in order to deliver this tumor from the back it would have required so much manipulation that, in all probability, we would have perforated the peritoneal cavity and flooded it with the contents of the cyst, and then have no opportunity to look after the peritoneal toilet. This was the reason why we were persuaded to remove the tumor through the abdominal incision and establish counter-drainage through the back. I was surprised to see how little fluid exuded from the rubber drainage-tube, and I firmly believe I could have done without this tube.

As one of the speakers said, the interesting part of the subject is the causation of this cyst. There was no history of ureteritis. The woman never complained of pain along the course of the ureter, and upon vaginal examination no ureteritis could be detected. There is no question that cysts of the kidney are often of congenital origin, but one would not expect this was.

THE LIMITATIONS OF CRANIOTOMY.

By WILLIAM H. MYERS, M.D.,
FORT WAYNE.

As this Association was established chiefly for the purpose of discussing subjects connected with obstetrics and gynecology, I have considered it advisable to discuss and determine, if possible, the rule in regard to the class of cases in which the question of an operative procedure is to be considered, involving the life of the mother and child.

In a paper read before this Association at its meeting in St. Louis in 1892, I used the following language: "It has always been a recognized rule in midwifery that no woman should be allowed to die without some attempt being made to save her and her offspring, or at least to save her at the expense of her child." Differences of opinion, due in some measure to religious beliefs, and likewise to the personal feeling of the husband, have entered into this question.

Napoleon, when appealed to by Dubois, said: "Treat the Empress as you would a shopkeeper's wife in the Rue St. Martin; but if one life *must* be lost, by all means save the mother." Henry VIII., when questioned thus before the birth of his son, Edward, exclaimed: "Save the child, by all means, for other wives can easily be found."

Of late years the happy results following the Cesarean section and Porro's operation have done much to efface the dreadful feeling that we must in such cases decide whether the life of the mother or that of the child is to have preference, seeing it is now quite possible to save both.

When we use the term, the "Limitations of Craniotomy," we include all the procedures for reducing the bulk of the child. In our text-books the indications for craniotomy usually enumerated are: a contracted pelvis where the forceps and turning are of no

avail, tumors, convulsions, hemorrhage, great exhaustion, rupture of the uterus, and impaction of the head.

I hope to present for your consideration procedures other than craniotomy which are equally safe to the mother, without endangering the life of the child. We must indorse the language of the late Dr. Meadows, that "The whole tendency of modern midwifery practice is setting in very decidedly in the direction of absolutely and entirely abolishing this most abominable, unscientific, and brutal proceeding." The last utterance of Dr. Barnes is that "The cases in which the lives of the mother and child are supposed to stand in antagonism are vanishing before the light of modern science and skill." How different the above quotation from his teaching in 1885, when he declared embryology justified, in obedience to a peremptory law which enjoins us to sacrifice, if need be, the child, in order to save the mother. He speaks of "sacrificial midwifery," and adds: "We must lay aside the lever, forceps, and turning, and take up the perforator and craniotomy forceps, incompatible with the life of the child. A law of humanity, hallowed by every creed and obeyed by every school, tells us that our first and paramount duty is to preserve the mother, even if it involve the sacrifice of the child, and thus rescue the matter from the Cesarean section: that operation which the late Professor Davis justly called the last extremity of our art, the forlorn-hope of the patient."

In opposition to this we have the expressed opinion of Baudelocque, who says: "To mutilate a living child in order to avoid the Cesarean section is the offspring of ignorance and inhumanity." This could only have been written at a time when craniotomy was recognized and sanctioned by the British profession and undertaken with the avowed intention of destroying life; but within a comparatively recent period the voice of the leading obstetricians is almost entirely for Cesarean section. Conner says that, "Looking at the results from Cesarean section when done early, an *accoucheur* who performs craniotomy on the living child sacrifices a life which he is in duty bound to preserve. Surely an infant coming into maturity is destined for something better than to have its glimmering life extinguished by an *accoucheur* skilled in the use of the dreadful perforator." Skilled like C. Rokitansky, Jr., who in 1871 performed fifty-two operations without the loss of a single mother.

The assertion of such facts are probable proof that the operations were hasty and unnecessary—the operator possibly influenced by an ambitious desire to gain additional success.

Statistics—comparing the relative value of Cesarean section and craniotomy—are worse than useless, because they too frequently are made to suit the operator's convenience. Cesarean section is not an alternative of craniotomy, it should supersede craniotomy in the case of all living children.

Cameron's experience was that with twenty-three cases, 92 per cent. recovered, while the lives of all children were saved, the last an item that has no place in the statistics of craniotomy. In conclusion he urges that the Cesarean section should be made one of choice and not resorted to after every other means have failed.

In view of the marvellous success that has attended abdominal surgery, it is but reasonable at this time to reconsider the whole question involved as to the relative merits of Cesarean section, Porro-Cesarean, and craniotomy. Up to the middle of the year 1887, Drs. Harris and Sänger had collected reports of thirty-one operations known as the Sänger method. Of these thirty-one operations there were twenty-three in Germany, four in Austria, two in France, and two in Italy. The result to the mothers was the saving of twenty-four, giving a maternal mortality of 21 per cent. Thirty children of the thirty-one were saved—giving a mortality of 7 per cent.

From July, 1885, to July, 1886, we have record of twenty operations, resulting in the saving of eighteen of the mothers; maternal mortality 10 per cent. Of the twenty children nineteen were saved; mortality 5 per cent. Why has the Cesarean section been so fatal in the past? Not from the nature of the operation itself, but the fatality has been due to delay, to defective operations and methods of operating, and to the teaching of the schools and text-books that the operation is almost necessarily fatal.

Professor Meigs taught in his classes and in his books in 1859 that "operations for the extirpation of diseased ovaries are not to be justified by any amount of success." The terrible deaths from cystic ovarian disease stirred the compassion of Keith, Wells, and Atlee. They operated in the midst of a hostile and even threatening profession; assailed by authors in their books and by teachers in their classes. They at last attained the highest successes when they

grasped the idea of the "clean touch," as taught by Lister. So I will assert that statistics which embrace operations performed ten or twelve years ago are of but little value under the application of the rules of modern aseptic surgery. The technique of the Cesarean section and Porro has been so modified and perfected that the percentage of recoveries and of children saved is so much higher that we dare not compare the mortality of a Cesarean or Porro in 1871 with the same operation in 1895.

I think it proper to give here a few cases to illustrate the condition of some of the victims who submitted as a last resort to Cesarean section, and see if we may not be able to discover the chief factors in the high death-rate constantly referred to in books and lectures.

The first case is reported by Garrigues in the *American Journal of Obstetrics* of 1883. The patient had caries of the sacrum and lower vertebræ, hemorrhage of the lungs, cystitis, and ante-partum hemorrhage; pulse 124; subnormal temperature; she lived forty-eight hours.

The second case: cervical myoma, cystitis, nephritis, both kidneys nearly destroyed. Death in thirty-six hours.

The third case, reported by Krukenburgh in the *Gynecological Archives*. The conjugate diameter was less than two and one-half inches; twenty-five hours in labor; feeble at the time of operation. Death from collapse.

The fourth case: caries of the lower third lumbar vertebræ and the sacrum, scrofulous remnants of old pleuritis, ascites and cystitis, ante-partum hemorrhage; Cesarean section; died fifty hours after the operation.

The fifth case: pelvic tumor; after four days of labor was conveyed by rail to Königsburg, a journey of seven hours; operation twelve hours after rupture of the membranes. Death in four days.

The sixth case (J. R. Wiest, in 1866): Operation four weeks after rupture of the membranes and nine days after labor had begun. Death in twenty-four hours.

The seventh case (Drysdale): Labor lasted fourteen days. Septic infection at time of operation. Death in twenty-six hours.

The eighth case (Fleishman): In labor three days; septicemia. Death twenty-eight hours after operation.

The ninth case (Bresky): Sero-purulent peritonitis at the time of operation. Death in two and one-half hours.

The tenth case (Parish): Patient in labor forty-two hours; after futile attempts at delivery by craniotomy, operation; pulse 124. Death in twenty-four hours.

The eleventh case: Fibroma. Labor began September 28th. Death in five days.

The twelfth case (reported in *New York Medical Journal*): Patient had profuse hemorrhage in latter part of pregnancy. Operation. Death from septic peritonitis in forty-four hours.

In all these cases the indications for the Cesarean section were indisputable at the onset, and the deaths resulted from preventable causes, except where antecedent disease was present.

For these statistics I am indebted to Garrigues, of New York. Dufriellay's statistics may be cited to disprove that the Cesarean section is not necessarily so fatal as has been by many represented. He has shown 81 per cent. of recoveries where the operation was performed before the mother became exhausted, and where the labor had continued only a few hours.

This doctrine is in accord with the law that the liability to most of the morbid complications connected with labor increases in proportion as the labor is increased in its duration. In illustration I will give a few statistics from Collins, who had charge of the Lying-in Hospital in Dublin during seven years. In 15,850 cases the duration of labor was published: within one hour, mortality one in 322 cases; from two to three hours, one in 231; from four to six, one in 134; from seven to twelve, one in 80; from thirteen to twenty-four, one in 26; from twenty-five to twenty-six, one in 17; above thirty-six hours, one in 6. Proving that even in normal labor the duration is a most serious element of danger. This same law will apply to craniotomy or Cesarean section.

I have been able to obtain statistics of cases where the duration of labor before the operation was limited to a few hours: Guinot, one case; Simon, two cases; Herbert, one case; Zinke, Palmer, Brandt, Studi, Picque, and Myers, one case each. All of the above cases recovered. In these cases the operation quickly followed the onset of labor. In contrast with the above I will present seven fatal cases in which I was enabled to obtain the duration of labor before the operation: One labor lasted four days; one, nine; one,

fourteen; one, three; one, six; one, two; and one, twelve. These were *all fatal.*

Let me ask, who is in great measure responsible for the mortality in Cesarean section? Authors and professors; they who teach us to wait until Cesarean section becomes a case of necessity and ceases to be one of election. These teachings have often made the death-bed the field for surgical display. Why should we make the Cesarean section an operation of election and not one of necessity? Because by so doing we prevent that condition of exhaustion which inevitably leads to a fatal result. I am not aware that there is any operation in the whole range of surgery which must be a matter of necessity, sooner or later, in which it is considered advisable to wait this contingency. It would not be considered good practice to wait until a woman is exhausted by fruitless pains of labor, and the pelvic structures have suffered from the effects of prolonged and injurious pressure, before having recourse to the forceps. It would be better to anticipate this impairment and not wait until the vital forces are at their lowest ebb.

There can be no doubt that craniotomy still has a place in obstetric surgery, and is indicated where the fetus is dead or non-viable and the conjugate diameter above two and one-half inches; also in obstructed labor due to monstrosity or hydrocephalus.

The choice of the patient must for the present be considered, her chances of recovery being stated by the physician for craniotomy, as nine out of ten, the child being dead. The Cesarean section chances for recovery now almost equal the above percentage, with the prospect of a living child. That craniotomy will be eliminated from obstetric surgery I do not believe; but as a resource it should be to the last degree possible minimized. This can only be done by instructing the general practitioner that delay is dangerous and will be fatal to the mother and child; that their safety mainly depends upon the early recognition of the nature and extent of the obstruction. We must instruct them that the statement of Mariceau was false when he said, with reference to Cesarean section, that "If it is true that any woman has escaped, it was the work of a miracle and the expressed wish of God, who, if He wills it, is able to raise the dead as He did Lazarus."

Teach the general profession that with the increased possibilities for saving the lives of both mother and child the question of

the greater value of one life over another is fast disappearing, and, that the old landmarks have changed; that they can no longer sit at the bedside and draw deductions from the old data, or guide their practice by the statistics of Cesarean section accumulated prior to the Listerian era.

I will now briefly allude to the comparative mortality of craniotomy and Cesarean section. The wide discrepancies between the statements of different authors is unaccountable except on the hypothesis that they have derived their information from statistics written at different periods. How else can we account for the fact that the maternal mortality for Cesarean section is given as $66\frac{2}{3}$ per cent. by one author, while another places the maternal mortality at less than 8 per cent.?

According to Watters, "De Soyn in his thesis gives 52 cases of embryotomy in pelves of less than 2.15 inches, with 31 recoveries and 21 deaths, a mortality of 41.38 per cent. In the thesis of Maygrier there are mentioned 67 cases of embryotomy in pelves from 2.53 to 1.4 inches, with 39 recoveries and 28 deaths, a mortality of 41.79 per cent. Of these cases there were 31 where the pelves measured 2.34 inches at the highest, with 17 recoveries and 14 deaths, a mortality of 45.16 per cent. In the statistics of Rigaud and Stanesco the mortality in 122 embryotomies is given at 38.52 per cent. These are probably the most accurate statistics available, and it will be observed that the conclusions are relatively uniform."

In alluding to large numbers of craniotomies, Dieterman, of Berlin, gives account of 239 craniotomies in 22,051 deliveries, with a mortality of 12.8 per cent. From 1882 to 1887 his per cent. is 9.4.

The statistics from Leipsic give the mortality at 8 per cent.

In Guy's Lying-in Charity, in the last decennial period, 24 cases required perforation. Of these four mothers died.

The high death-rate here alluded to after craniotomy must refer to the period preceding the introduction of asepsis and antisepsis. Here, as in other surgical procedures, cleanliness has entered as a factor; but the field of operation cannot be rendered wholly aseptic from the nature of the operation, often attended by lacerations and followed by pelvic inflammations.

The fatality of Cesarean section has radically changed owing to

the modifications in the treatment of the uterine wound—a perfect technique; these have been lowered approximately to that which is claimed for difficult embryotomy, a mortality of 10 per cent., with the saving of 95 per cent. of infantile life.

I would urge this with all the force that the strongest conviction imparts, that the Cesarean section should be performed as soon as we can be sure of the diagnosis.

In 1862 Sir James Paget uttered the following words of prophecy before the British Medical Association while speaking of the mortality after craniotomy:

"Some of the deaths after surgical operations are preventable, and the mortality *will be* reduced if the members of the Association will decide that it shall be."

To the above prophecy I will add another from T. Gaillard Thomas, for Cesarean section:

"No physician who reads aright the signs of the times can for a moment doubt that the operation of the Cesarean section will in the future yield almost as good results as those now yielded by laparatomy performed for the removal of ovarian and uterine tumors; no progressive obstetrician will fail to recognize that it is about to relegate to the desuetude which it deserves that sad and disgusting procedure, craniotomy, with its revolting details, its terrible responsibilities, and its confession of the poverty of obstetric resource."

DISCUSSION.

Dr. Edwin Ricketts, of Cincinnati.—Mr. President: I do not think a more timely paper has been read before this Association than the one presented by Dr. Myers on the limitations of craniotomy. When we take into consideration that every medical student upon graduation, or before it, has presented to him the latest obstetrical instruments for craniotomy, the latest cranioclast, it is enough to cause us to call a halt and ask if there are not other things to be considered rather than the accumulation of instruments to be used in such a bloody procedure. I wish to agree with the author of the paper, that craniotomy is never justifiable on a living child, and the time has come when the general practitioner must stand along with those of us who

do special work, and say that craniotomy is a murderous, bloody procedure. I think the essayist has clearly put it before us in a statistical way, so that it is not necessary for me to touch upon the figures he has given. If we will look into the statistics of all the cities in this country alone, we will be surprised at the number of craniotomies that are done upon the living child. If you will get out into the undercurrent and make personal inquiries, you will be surprised at the number of craniotomies that are being done in rural districts. It is simply appalling in this day and age, when we have procedures at our command which we offer the mother to save her life along with that of her offspring. I want to say this, that when a practitioner kills a child, it is one life gone then and there, and when you kill the child with the additional risks of sepsis, with a chance to kill the mother, it seems to me common sense alone should teach us to consider and look upon craniotomy as a horrible and unjustifiable procedure which is still abroad in the land. I repeat, the time has come when societies like this should raise their voice against this procedure and take a positive stand in the matter. It has been held heretofore by some of our religious denominations that craniotomy should not be done. Let us brush that aside and look at the matter from a scientific standpoint, and we believe that it is a procedure that should not be done. We only have to refer to the literature to ascertain the results obtained, and we leave it in your hands for judgment.

Dr. Thomas J. Maxwell, of Keokuk.—I listened with a good deal of interest to Dr. Myers's paper. He ably presented the question and choice as between Cesarean section and craniotomy, and I fully agree with him and the last speaker, that craniotomy is not justifiable on the living child. Cesarean section, at the present time, is not so serious an operation as it was formerly. Our laparatomists and abdominal surgeons have proven beyond all cavil that to open the abdomen is not a very dangerous procedure, but that it is the delay that is fraught with danger: delaying the operation for two or three days until the patient is exhausted, and then resorting to this operation. I have just one experience to record, and that is the experience of delay and its results upon the mother. I do not know that it was the fault of the physician, as far as delay is concerned. The case was an unfortunate one. A very small dwarf, rickety negress of our city became pregnant. The conjugate diameter was not over two and a half inches, and she was in labor two or three days before a physician was called. At the end of that time I was called by the attending physician to see the case, it being after 9 o'clock at night, in a hovel, where we had no conveniences for performing an operation, and hence surgical interference was post-

poned until daylight. In the morning we did the operation as best we could considering the surroundings. The environments were of the poorest character for such an operation, but we did it as well as we could, using all the precautions and cleanliness possible under the circumstances. The child and placenta were delivered through an incision in the uterus and abdomen, the uterus closed, and there was very little hemorrhage. The patient was in as good condition after as before the operation, but died of something—I presume, exhaustion, septicemia, or something of that nature—in the course of three or four days. I did not see the case after the operation. The child was delivered alive. I have no doubt that if the case had been operated upon at the beginning of labor the lives of both the mother and child would have been saved. Delays are dangerous in these cases.

Dr. Rufus B. Hall, of Cincinnati.—I want to indorse the paper of Dr. Myers, and to emphasize one thought, that in those cases that are to be subjected to operation the patients should be looked after carefully and prepared for operation, and then operate near or at the commencement of labor, and not ten or twenty-four hours after labor. We shall always have bad results if we continue to operate after the patient has been subjected to various attempts at delivery by forceps. I think our statistics of Cesarean section or Porro's operation would be very much better if these rules could be carried out. There are a great many deaths credited to the operation under consideration which, in all justice to the patient and to the profession, should not be counted, particularly those tabulated in the paper. In some cases the patients are in a dying condition from gross organic disease of the kidneys, and perhaps have sepsis at the time of operation. Such patients scarcely have a chance for recovery from any operation where an anesthetic would be called for and continued for a considerable length of time. The anesthetic alone kills many of these patients. The deaths noted by the essayist should not be counted against the operation. I am convinced that if the cases could be carefully examined and classified and a Porro operation or a Cesarean section performed at the time labor commenced, or within an hour or two after it commenced, before any attempt is made to deliver through the natural passages, the mortality would be less, or as low as hysterectomy is. I do not see any reason why it should not be lower for the child than the average case dealt with by the natural process.

Dr. Myers (closing the discussion).—I shall occupy but a few moments of your time in closing. I regard delay in these cases as dangerous. I have had but one experience, in which I did a Porro operation on a dwarf thirty-six inches in height. The patient also

married a dwarf. The conjugate diameter was an inch and three-quarters. The child was vigorous, as discovered by auscultation, and it was decided it would be necessary to perform a Porro operation, which was done in a kitchen on a table, surrounded by unfavorable circumstances, and poor assistance. After making the incision the child was delivered in seven minutes from the time I began until the child was in the hands of the nurse.

I desire to call attention to one point, that is, instead of making an incision six inches in length in the uterus, after exposing it, I made a small incision in its centre, inserted my two index fingers, tore it across transversely without rupturing the membranes. After thrusting my hand through I seized the child by the neck, and the delivery was almost instantaneous. Of course, a ligature was thrown around the cervix and the serre-neud applied to the uterus; the child was removed alive, and the mother made a happy recovery. So this adds one more case to the list. I regard the success of the case as being due to the celerity of the operation, and also to having no delay.

There are some questions that might be suggested, and one is whether or not the placing of an elastic ligature around the cervix affects the uterine contraction and tends toward hemorrhage. I think if a majority of the Fellows present were asked what to do in a case where the conjugate diameter was two inches and a half they would decide to prepare the case for a Cesarean section, and I believe a larger majority with a conjugate diameter of two and three-quarter inches would still recommend it. So you see the limitation narrows down and minimizes itself to almost nothing for Cesarean section or long-forceps version.

In my remarks I should have included symphyseotomy, which is attracting considerable attention in Europe at the present time.

THREE RECENT CASES IN GALL-BLADDER SURGERY.

By EDWIN RICKETTS M.D.,
CINCINNATI.

When we have a gall-stone or gall-stones in the bladder, cystic duct, or common duct, the biliary flow need not for a time be interrupted. When the stone is primarily engaged in the lower end of the gall-bladder or in the common duct, then a pathological lesion begins. The stopping of the flow of the bile may be intermittent or constant enough to produce symptoms indicating tension. Then we can have an obstruction of the common duct due to external trauma, such as a blow received over the region of the liver. With this catarrhal condition of the common duct is usually found distention as the result of bile not being carried on through the gall-ducts. Then we may have a solitary calculus engaged in the lower end of the gall-bladder, causing thickening of its wall, with the periodical escape of infected or non-infected contents. It is claimed by some operators that gall-stones are never preformed in the hepatic or common duct. If such is true we have some wonderful phenomena to account for, in which calculi were found post-mortem in great numbers in the hepatic duct and liver substances and none in the gall-bladder, cystic or common duct.

As there is the possibility of finding one or more stones in the hepatic duct, I make it a rule to try to introduce a probe into the hepatic duct after the gall-bladder has been incised, even though nothing but a catarrhal condition is found. The first successful probing of this kind was reported to the Southern Surgical and Gynecological Society at the meeting in Louisville in 1892.

Case I.—Mrs. H., white, aged fifty-two years, German, and a patient of Dr. Campbell, of Vanceburg, Ky. Consulted me February 1, 1895. While she had some pain in the region of the

stomach, followed by attacks of diarrhea, she said that she had been but slightly jaundiced within the eight years. She was suffering from intestinal digestion with diarrhea; there was marked eructation of gas, and she said that it was seldom that her stools were other than grayish in color; there was no marked loss of flesh, nor did she ever have typical attacks of biliary colic. She said that it was seldom that she could take food without causing dull, heavy pain in the stomach. Three years previously Dr. Campbell had made a diagnosis of gall-stone and urged surgical interference. There had been occasional attacks of vomiting that were severe enough at times to cause hematemesis.

On examination I found a tender spot a little to the right of the median line and over the region of the gall-bladder; on deep pressure a nodule could be felt; the pressure elicited much pain. Diagnosis of gall-stone was made and surgical interference urged. The abdomen was opened on the following day, February 2d, and the gall-bladder was found only moderately distended. Upon passing the finger down alongside of the bladder under the pylorus a stone could be felt through the wall. The bladder-wall, which was thickened, was incised and quite a quantity of fluid removed. Passing the Tait alligator forceps (closed) well down into the bladder, the same being held up into the wound by catch forceps, the click was readily gotten, and, opening the blades with some difficulty, the stone, weighing one hundred and twenty grains, was dislodged. The small end of the olive-pointed probe was passed down into the common duct and an effort made to probe it, without success. Satisfying myself that I could not pass the probe through the common duct into the duodenum, I withdrew the probe and bent it, passing it down into the wound with the end pressing against the upper gall-bladder wall. I thus readily passed the end into the hepatic duct for quite a little distance, and satisfied myself that this calculus was beginning to distend the upper end of the common duct; in other words, that it lay at the junction of the common and hepatic ducts. I stitched the incised bladder into the abdominal incision with silkworm-gut, leaving an opening through which the lower end of a glass tube was passed for drainage down into the lower end of the gall-bladder. This bladder was flushed morning and night with warm filtered water by means of a common metal syringe, with the patient on her right side. The débris washed out through

this tube for seven days following the operation was remarkable. At this time, my assistant, Dr. Robinson, was instructed to give her one-tenth of a grain of calomel every hour until she had taken one grain. By the time the last dose was administered the dressings were flooded with bile. Within twenty-four hours a saline was administered; bowels moved promptly, but no sign of any biliary admixture in same. The flushing was kept up morning and night for another week and the calomel repeated, followed by salines. The stools were then of proper color; with this condition present the tube was removed and the wound allowed to heal. The patient went home at the end of four weeks minus her diarrhea, and her health since has been all that could be desired.

Case II.—J. F., white, aged twenty-eight years, a vigorous countryman, brought to me by Dr. Hill, of Vanceburg, Ky. In felling a tree he had received a blow over the liver, knocking him a distance of twenty feet, was picked up unconscious, carried to his home, and put to bed. He soon rallied from the shock, and within two days a marked tenderness with distention was discovered over the region of the gall-bladder; this distention greatly increased for five weeks, during which time Dr. Robert M. Biggs saw him in consultation. At the end of five weeks he was brought to my hospital. I found that he had had clay-colored stools for four weeks, was very much emaciated, and the pain in the region of the distention was so great that he had to be kept under the influence of morphine. The tumor was even in its development and round, the lower end broader, extending almost to the crest of the right ilium. I diagnosticated an obstructed common duct and urged that a cholecystotomy be done immediately. Patient was given a bath, bowels moved by salines, and on the following morning at 10 o'clock I cut down on the gall-bladder, finding it adherent to the abdominal wall. Plunging the curved trocar into the ball-bladder, I drew from it into a large bowl fluid that by actual measurement was *one hundred and twenty ounces.* I tried to pass the small end of a probe into the common duct, and found that the lower end of it was obstructed. Curving the probe, I readily passed the curved end into the hepatic duct. The lower end of a glass drainage-tube was passed down into the gall-bladder, through which the bladder was washed out morning and night for ten days, at which time one-tenth of a grain of calomel had been taken; the dressings were flooded with biliary fluid, but

the salines administered by mouth did not bring any change to the condition of the stools. The flushing was kept up for another week, and the stools began to show some signs of changing to the desired color; calomel was repeated until the stools became of the proper color; the drainage-tube was removed, and the wound allowed to heal. The convalescence of this patient was all that could be desired, and a letter from his brother tells me that his health is perfect.

CASE III.—Mrs. L., aged thirty-eight years; a patient of Dr. Halderman, of Portsmouth, Ohio; mother of three children. Says that she cannot recollect the time when she did not have a "sallow skin." For years she has suffered from attacks of pain, moderately severe, over the region of the liver; her ejections have seldom been of a golden-yellow color. During the past four years the pain has rather increased in severity; especially has this been the case for the past year, necessitating the use of opium. The administration of calomel followed by salines failed to give relief from pain during the prior six months, and consequently she, with her husband, was ready to accept any procedure that promised relief. Dr. Halderman had watched the stools carefully, having the same washed, without finding any calculi.

Upon examination I found her thin in flesh; pressure over the gall-bladder caused pain, although no distention could be mapped out. So thoroughly was I convinced that the suffering was from an obstructed common duct that I urged an exploratory incision. This was consented to, and on May 18, 1895, with the assistance of Drs. Halderman and Kline, I opened the abdomen over the gall-bladder, finding it two-thirds filled with fluid; the gall-bladder wall was thick—thicker than any that I had ever seen. Massage failed to force out the fluid. After the fluid had been carefully drawn off and the parts sponged I tried to explore the cystic common duct with the olive-pointed end of a probe, without success; no calculi by click or sense of touch could be found. As the fluid was not septic, I decided to do a cholecystenterostomy with the aid of the smaller-sized Murphy button. The button was passed on the thirteenth day, and the patient has had no pain, but steadily gained in strength and flesh. Her color has improved, while the tri-weekly dose of opium is a thing of the past.

OPERATIVE PROCEDURES FOR THE RELIEF OF OBSTRUCTION OF THE BILIARY DUCTS.

By W. E. B. DAVIS, M.D.,
BIRMINGHAM.

At the meeting of the American Medical Association in Detroit in 1892 I presented a paper before the Surgical Section entitled "Peritonitis from Gall-stones," in which I reported some experiments on dogs where I had tested the value of gauze in draining the bile after wounds of the gall-bladder and ducts. I reported a case where I had removed the gall-bladder, without tying the cystic duct, and by packing with iodoform gauze, which was removed on the third day, the animal got well, and another where I incised the gall-bladder and packed gauze around the opening, no stitches being used, and the animal recovered. I concluded that if an animal could get well, by packing with gauze, without any stitches, that it would be safe to depend upon the gauze and a glass drainage-tube in opening the common duct and removing the obstruction in the human subject. I took the position that suturing should not be resorted to in such cases from the fact that the patient requiring such an operation was nearly always in a very serious condition from cholemia, and that time was an important factor in such cases; that an incision should be made in the duct, the obstruction removed, a glass drainage-tube introduced down to the incision, and gauze packed around it. The crushing of stones through the duct with forceps, as recommended by Lawson Tait, was pronounced a risky procedure, as injury to the duct might be produced, and sloughing afterward result, being followed by extravasation of bile into the abdominal cavity. The method of puncturing with needles was also condemned. The plan of dislodging the stone either into the intestine or back into the gall-bladder was advised, if it could be accomplished.

According to Gaston,[1] "Incision and suture of the walls of the common bile duct, with the removal of gall-stones, have been resorted to in thirteen cases, with two fatal results." Drs. Marcy and Vander Veer's cases are included in this list. Dr. Marcy's case was successful; Dr. Vander Veer's proved fatal.

No cases have been reported where the common duct has been incised and the obstruction removed *without suturing*, but Dr. Gaston informs me that he recently performed the operation, following my suggestions made at the American Medical Association and at the meetings of the Southern Surgical and Gynecological Association in 1892 and 1893. His patient died from exhaustion, as there was extreme cholemia at the time the operation was performed. However, there was no peritonitis, and the drainage was satisfactory.

The following case illustrates the operative procedure which I desire to emphasize, although the common duct was not incised:

Mrs. K., aged about thirty years. Was sent to me by Drs. Cunningham, of Birmingham, and Brown, of Ensley City. The patient gave the history of frequent attacks of gall-stones for three years. When I saw her she had been confined to her bed for six weeks with jaundice, and had had a temperature of 103° a good deal of the time. The case had been diagnosticated by Dr. Cunningham as one of gall-stones, with impaction in the common duct. After seeing the case we thought it best to wait a few days, with the hope that the obstruction might be relieved, as she had recovered from several very severe attacks and as the operation would have been a very serious one at that time. She had not been able to take scarcely any nourishment during her illness; had vomited a great deal, and was very much exhausted. Pulse would run up from 120 to 130 at times. The urine was highly colored with bile; feces clay-colored. On the second day after I saw her she became very much worse, and it was deided to operate without delay. She was brought to our private hospital and operated on on August 6, 1895. Drs. Cunningham, Talley, and J. D. S. Davis were present. The incision was made about three and one-half inches along the lower border of the ribs, beginning at the right rectus muscle.

[1] Reference Handbook of the Medical Sciences.

There were very extensive adhesions to the liver which had to be separated before the region of the gall-bladder was reached. It was with considerable difficulty that the bladder was found. It was not much larger than a chestnut and was almost covered with liver-tissue. It was full of soft stones, and was so small and so much diseased that it was removed, together with the upper part of the cystic duct, which was enlarged and diseased. A probe was then passed through the duct into the duodenum. Only a few drops of bile escaped into the field of operation, but no stone could be found in the hepatic duct. While the probe could be passed through the ducts into the duodenum, inasmuch as the jaundice was so marked, I was not sure but that there was some portion of the common duct that would not permit of the passage of the bile. I also feared that the extreme catarrh of the ducts which had existed for so long a time could not be relieved except by drainage from without. So I introduced a glass drainage-tube and packed around the tube with iodoform gauze. The patient had no symptoms of peritonitis. The bile escaped in great quantities from the wound. At first it was about as black as tar. The tube was removed within the first twenty-four hours. The gauze was allowed to remain four days, with the exception of a small portion which was packed in the abdominal incision. The patient's bowels began to act on the second day. She passed her urine regularly, and it began to clear up considerably. She continued to vomit and was fed by the rectum. She died on the sixth day from exhaustion. The general cavity was completely walled off and the fistula could be explored down to the duct. So the operation was a success as to drainage and walling off of the cavity.

Dr. Gaston, in his article prepared for the *Reference Handbook of the Medical Sciences*, after the Louisville meeting of the Southern Surgical and Gynecological Association, at which he presided, refers to the use of gauze, but does not allude to the operation of incising the duct *without suturing*, which I advocated at that meeting. Perhaps at that time it did not appear plausible enough to him to recommend it in his paper. However, since that time he has adopted the method in a case which has been referred to. In his article he says,[1] "The use of gauze tamponage in operations involving the

[1] Reference Handbook of the Medical Sciences.

integrity of the gall-ducts, either around drainage-tubes or without them, has been attended with such favorable results as to commend this procedure to surgeons."

In order to still further study the effects of extravasation of bile into the abdominal cavity and the value of gauze tamponage in cases of operation on the gall-bladder and ducts *without suturing*, I have, since August 10th, operated on twenty dogs.[1]

It will be noted that in those cases where gauze was packed around the field of the operation that nearly all of the animals recovered, and a complete walling off of the general cavity was found when they were reopened. In one case I opened the abdomen and attempted to remove the gauze in forty-eight hours, but the adhesions gave way. So I concluded that it was not safe to attempt to remove the gauze so soon, and would recommend that it be left in for four or five days. Of course, a portion of the gauze in the abdominal incision should be removed sooner to give free exit to the bile. Two animals recovered without drainage, but in these cases the bile escaped through the abdominal incision and through the stitch holes. These were reopened several weeks after the operation, and a great many adhesions were found. In one case there was an omental hernia forty-eight hours after the operation, due to the giving way of the stitches. The abdomen was reopened, and there was but slight peritonitis, the bile having escaped through the incision. In some cases gauze was put in the lower portion of the abdominal incision, but drainage was not satisfactory and the dogs died in from twenty-four to seventy-two hours from peritonitis. In two cases where there was no drainage the dogs died in a few hours from shock. It was noticed in all cases reopened, where the ducts had been incised, that the gall-bladder was found very much contracted and was empty.

These experiments clearly confirm the position taken in my paper read in 1892, which has already been referred to. They show that the constant extravasation of bile into the cavity will produce peritonitis unless there is satisfactory drainage, as pointed out by Sabatier;[2] that the abdominal cavity may take care of a consider-

[1] The operations were done at the laboratory of the Birmingham Medical College, and I was assisted by Mr. George Hogan, a member of the Senior Class, who kept a record of the operations. For report of experiments see vol. iv. Transactions of the Southern Surgical and Gynecological Association.

[2] International Encyclopedia of Surgery.

able quantity of bile; and that it may be walled off just as any irritating fluid would be. The drainage by gauze, together with the glass tube, insures a clean abdominal cavity, and should the fluid be as septic as the pus from an appendiceal abscess, it would be satisfactorily drained by this process, and there would be no general inflammation.

About 1825 Sabatier claimed that fatal peritonitis would occur after a few hours or days as a result of extravasation of bile into the abdominal cavity, as he had observed such cases where peritonitis resulted from injury to the gall-bladder.

There are cases in which it is necessary to do cholecystenterostomy, as the obstruction in the duct cannot be relieved. I do not believe it wise to do this operation where there is no obstruction in the common duct or where the obstruction can be relieved, as was done for awhile by Dr. J. B. Murphy. The operation of cholecystenterostomy is a valuable addition to the surgery of the gall-bladder and biliary ducts, and much credit is due to von Winiwater and J. McFadden Gaston for their experiments demonstrating the feasibility of the procedure; still this operation should not be recommended, and is not advised by Dr. Gaston, where the obstruction in the common duct can be relieved. Post-mortems in some cases have gone to show a valve-like formation which prevents the contents of the intestine passing into the gall-bladder, but this cannot be depended upon in all cases. We may often expect a very similar condition to that which is found in cases of communication between the urinary bladder and intestine, where the feces get into the bladder. The field of this operation should be limited, for there are but few cases of impaction of gall-stones that cannot be relieved by an operation on the duct. To leave the stone in the duct subjects the patient to the danger of perforation and peritonitis or to the development of malignant disease. Of course, there are cases of agglutination of the walls of the duct which cannot be corrected. Another advantage possessed by the method of incision and drainage is that stones can be removed from cystic and hepatic ducts and from the liver-tissue by the same procedure. The gauze also controls the bleeding which is sometimes pretty free from the adhesions which generally have to be broken up in getting down to the ducts.

NOTE.—After this paper was read Dr. J. McF. Gaston published in the November, 1895, number of the *Virginia Medical Journal* some remarks which he had made at the meeting of the Virginia Medical Society, and I quote the following from his discussion :

" The first and most important consideration pertains to the treatment of cases in which there are gall-stones in the gall-bladder and ducts, which call for removal by incision, and it is found impracticable to attach the sac of the gall-bladder to the skin or the intestines, or to suture the wall of the duct. In these cases it has been proposed to tampon the intervening space to the external opening with gauze with or without medication. By packing around with gauze, and leaving the ends of the strips protruding, drainage is accomplished, and the bile or other discharge is kept from entering the peritoneal cavity. While fresh bile is not found to be an irritant to the peritoneum, the vitiated discharge which takes place after obstruction proves hurtful, and should not be allowed to enter the abdominal cavity.

" Dr. W. E. B. Davis has taken a prominent part in urging this mode of procedure, and has made numerous experiments upon inferior animals, illustrating the advantage of introducing iodoform gauze into the wound for the purpose of walling off the intestines and other viscera, while it serves, by capillary attraction, to carry off the discharge.

" This has been practised by others with the best results ; and to Dr. Davis is due the credit of impressing upon the profession the advantages of this treatment in cases not admitting of the attachment of the gall-bladder to the external opening of the intestines, and in which it is found impracticable to close by suture an incision of the common duct after the removal of biliary calculi.

"Attention may also be drawn to the applicability of this process to cases of rupture of the gall-bladder either by traumatism or as a result of disease."

He follows these remarks with a report of cases.

DISCUSSION ON PAPERS OF DRS. RICKETTS AND DAVIS.

Dr. H. W. Longyear, of Detroit.—Mr. President: It seems to me papers of this kind on the surgery of the gall-bladder and biliary ducts are extremely valuable, as this branch of surgery is still in a condition of evolution. The points brought out by the last paper (Dr. Davis's) in regard to experiments on dogs and the treatment by gauze and drainage are very valuable and instructive, and as illustrating this point I will present these specimens, and give a description of the method of treatment at the time of their removal. The patient was one of the trained nurses of Harper Hospital, Detroit, who had had digestive disturbances for a number of years, and for about six or eight months attacks of severe pain located in the pyloric end of the stomach. The one symptom—that of pain—was about all that pointed to any biliary trouble. She had no jaundice at the time, never had had, and the pain was located exactly in the centre under the ensiform cartilage. I saw her in two attacks, in which she had some fever, and I made a diagnosis of biliary calculus, for which an operation was performed. I made an incision at the outer side of the right rectus muscle, and passing my fingers in they came in contact immediately with the pointed end of the kidney which rested up against the liver and touched the abdominal wall. It was a long time before I could find the gall-bladder, which lay back of the ensiform cartilage and behind the stomach, from which I removed these forty-nine stones which I show you. The gall-bladder could not be brought to the surface on account of its being intimately adherent to the liver. That is a point I wish to touch upon in reference to the after-treatment. The gall-bladder was incised, the stones removed, a number of which were contained in pockets reaching into the liver, the openings to which were enlarged with the finger and stones dug out. After the gall-bladder was emptied, passing my finger along the ducts, I found four of the larger stones filling the cystic ducts in the form of a row. I removed them by working them back into the bladder by massage and this cleared the ducts completely. The bladder could not be brought to the surface to be sewed to the abdominal incision. Instead of ablating the bladder, as advocated by some, I passed a rubber drainage-tube, sewed the bladder incision closely around it, and packed all around the rubber tube with iodoform gauze. For forty-eight hours bile passed through the rubber tube and the dressing was not disturbed.

It then began to appear around the dressings nearest the tube. These I removed, but not the outer ones. The next day all dressings were saturated, and I removed them with the tube and repacked with small gauze drain. No bile appeared after the fourth day. The patient made an ideal recovery.

Dr. J. B. Murphy, of Chicago.—I desire first to speak of the formation of gall-stones in the liver substance itself and in the hepatic duct. In an excellent article Courvoisier has practically collected all of the reported cases, from the first case published to date, and of the number he mentions five cases, possibly seven, in which the gall-stones were found either in the liver substance itself, or above the junction of the hepatic duct with the cystic duct forming the common duct. Naunyn states that practically if not all gall-stones are formed in the gall-bladder. (Here Dr. Murphy showed on the blackboard the position in which a large gall-stone was so situated in the common duct that a column of smaller gall-stones could not pass it, consequently they were forced back in the hepatic duct or into the liver, and driven out by either cicatricial contraction or by the formation of an excess of mucus in the gall-bladder. This was one of the cases of the author quoted.) In all cases the conclusion was reached that gall-stones did not form either in the hepatic duct or in the liver. They have been reported as having been found in the liver post-mortem, but just how they got there I do not know positively; some, we are sure, gravitated there in the large ducts produced by prolonged obstruction of the common duct. These are exceptional cases. They have to go against the current in order to reach the liver, and the probabilities are they were forced up into this organ in a column. Dr. Ricketts, in mentioning that fact, would lead us to believe that gall-stones occur more frequently in the liver than elsewhere, but it is rare that they are found in this organ post-mortem.

As to the symptom of jaundice, if we can obliterate from our minds the idea of this symptom being connected with gall-stones we would be far in advance of what we are today from a practical diagnostic standpoint. In my judgment, there is nothing so misleading in the literature of the past on this subject as the association of this symptom with the presence of gall-stones. In 60 per cent. of the cases I have operated on there had been no jaundice present in any stage of the disease.

In a case I have at present the woman appears to be jaundiced to look at her, but turn down the eyelid and examine the sclera and she is not jaundiced. An examination of the urine revealed no bile. This woman had attacks of colic every few days for two years and a

half; the attacks rarely remained away more than ten days, more frequently five days. Her temperature during the time of attack is from 103° to 105°. The first day of the attack it is 103°, and in not a single attack was there jaundice, nor were gall-stones suspected by the attending physician, because there was not jaundice. Let us leave the symptom of jaundice out of consideration in making our diagnosis; then we will come nearer ascertaining the actual condition with gall-stones and the symptoms produced by them. The symptoms they produce in the gall-bladder are the ones we should study, and Dr. Longyear referred to the absence of jaundice in the case he reported. I would emphasize the point again that we should remember that jaundice is only occasionally associated with gall-stones. When jaundice is present, however, it is an important symptom. I am afraid to operate on patients who have severe jaundice. They do not do well. They die. Take such a patient, and perform a simple cholecystostomy on him: on the third or fourth day thereafter he gets a little weaker, the secretion of urine becomes suppressed, and the patient dies. Therefore, in all operations in connection with gall-stones, where the patient has jaundice for a considerable time, I do the shortest and quickest possible operation for the relief of the jaundice. If the jaundice has not existed for a long period the tissues are not materially interfered with by it.

With reference to the operation of cholecystenterostomy, I think Dr. Davis in quoting me put it a little stronger than I would. I do not condemn the operation, but I say it is not positively indicated except where there is mechanical obstruction, or where the obstruction is such that you do not feel justified in removing it (the stone) to relieve it. Occasionally we have permanent obstruction of the cystic duct, and if we do a cholecystostomy we will have a permanent fistula. A gall-stone may escape into the gall-bladder and come out through the drainage-tube in a cholecystostomy weeks after the operation. Where the cystic duct is permanently occluded, if we do not extirpate the gall-bladder, we must do a cholecystenterostomy, or must have a permanent mucus fistula. There is no choice in the matter. The same is true when we have permanent obstruction of the common duct. If we have a permanent obstruction due to a gall-stone, or to cicatricial contraction as the result of the presence of gall-stones, we must do a cholecystenterostomy, or we have a permanent bile fistula, and if the obstruction be complete, death later from exhaustion. I may vibrate back again to the operation of cholecystenterostomy for a wider range of cases, and I believe I will; but in the last year I have done something like twenty cholecystostomies. I have had patients who

told me that they suffered from a drawing sensation after the operation, that is, in cholecystostomy where the gall-bladder is sutured to the abdominal wall. The gall-bladder in its natural condition rests upon the duodenum just about the position where the common duct empties into the duodenum. The tissues are both more or less movable, and they move in unison. The duodenum moves up and down, likewise the end of the pylorus and the liver, etc., in each respiratory act. When you have a gall-bladder sewed to the abdominal wall, which is stationary, the contraction goes on. The drawing sensation goes on, and I have found that my patients complain of great discomfort for months after the operation. They come back and say something must be done for this pain.

I am again seriously considering the advisability of evacuating the gall-bladder at the time of the operation, uniting and draining it through the duodenum. I know the mortality from this procedure is less than that from external drainage, either of one or two sittings.

I must repeat, again, that I am afraid to operate in the presence of severe jaundice. The operation of removing a gall-stone through the common duct is a difficult procedure even without suture. I think Dr. Davis will bear me out in that statement, and so will Dr. Ricketts. It is hard work to get down there and expose the stone, and dangerous even though you only cut it out and do not suture.

In a recent case I removed a gall-stone from the common duct very quickly; the patient did well for a time, but at noon on the third day thereafter she died suddenly. A post-mortem examination was not permitted.

Dr. E. T. Tappey, of Detroit.—I would ask Dr. Murphy what his experience has been in the matter of adhesions about the gall-bladder, whether he finds adhesions where there are gall-stones, and where there has been no ulceration.

Dr. Murphy.—I have seen but two cases of that class without adhesions. I consider fever with colic without jaundice an indication of infection of the gall-bladder, and those adhesions occur as a result of that infection without perforation. I have seen three cases of perforation and operated on them immediately after. All three of them died. I speak of adhesions produced by cholecystitis without perforation.

Dr. William Wotkyns Seymour, of Troy.—My experience with gall-stones is not a large one. I have only done twelve operations. I have had a rather extended experience with the trial of gall-stones in my own person, and have seen the benefits of the operation when I had a clinic in my own person.

The papers we have listened to and the discussion of the subject by

Dr. Murphy have been timely, because the profession at large do not yet recognize gall-stone disease as a perfectly suitable one for surgical procedures. There are many members of the profession who pin their faith to medicinal agents, and olive oil is to the fore.

One of the most fallacious elements in the diagnosis of gall-stones has been referred to by Dr. Murphy, namely, that it is necessary that jaundice should exist in order that a patient should have gall-stones. I must have had several hundred separate attacks before Mr. Tait operated upon me, and in but a single attack was I in any wise notably jaundiced. My complexion for a large part of the time was sallow, in marked contrast to what it was a few weeks subsequent to the operation I underwent. Despite the fact that cases have been recorded in which gall-stones have been found outside of the gall-bladder, I can but believe as a result of my observation of a few cases that gall-stones are formed not merely in the gall-bladder, but in any portion of the gall-ducts. The first case on which I operated for gall-stones dates back to the year 1885, when the question of gall-stone surgery was then in its infancy. I have recorded this case on a previous occasion, so I shall but briefly touch upon it here. The patient had a perfectly empty fixed gall-bladder. Three months before the date of the operation she had passed three gall-stones the size of beech-nuts, and she was never well after. There was cancer of the liver, the cancerous mass pressing upon the junction of the cystic with the common ducts. The patient made an easy recovery from the exploratory operation, although at the time of it the jaundice was so intense that she was practically a tea-green color, blanched considerably during the week or ten days succeeding the operation, and I ascribed this chill to the influence of the anesthesia. She died, and I made a post-mortem examination, and found twenty-six gall-stones in the hepatic duct at a considerable distance from the junction of the cystic duct above, the cancerous mass pressing upon it. No gall-stones were found in the gall-bladder. That does not preclude the idea that the stones were formed in the gall-bladder and worked back. Some of these stones were found high up in the gall-ducts.

Another case which I had early in my practice was that of a lady, very spare, so that abdominal palpation was very easy. She suffered from very severe attacks which I ascribed to hepatic colic. The stools were repeatedly washed, no gall-stones found, and although at no time could distention of the gall-bladder be diagnosticated by palpation or percussion, with the abatement of the attacks the patient passed frequent formed stools each day that were surcharged with crystallized sand, so much so that in taking the stools between the fingers

they felt like a roll of putty that had been rolled up with painter's smalt.

One pathologist refers to a number of cases in which gall-stones had been found in considerable numbers in the liver. Mr. Thornton and Mr. Tait have excised gall-stones from the substance of the liver where there has been no opportunity of communication between the gall-bladder and the nidus for stone within the liver tissue. I am inclined to think, from the observation of cases in my own practice—and I have seen a large number of cases of gall-stone colic—that the disease is largely congenital; that there is a decided family history in many of these cases. I know that, unfortunately, in my own family one of my children appears now to be developing evidences of a similar condition, having sharp attacks of gastric pain with tenderness in the region of the gall-bladder, not notably jaundiced, with fine pasty stools, which makes me suspicious that she has inherited a tendency she might better be without.

As to the operation of cholecystotomy, I believe it to be the procedure for gall-stones. It is not a difficult operation in the majority of instances to perform. It admits of thorough drainage of the bile-ducts for a considerable period of time, so as to permit the associated inflammation of the gall-ducts to abate. As to the theoretical objections to the dragging of a gall-bladder suture to the abdominal walls, I think they are practically *nil* in a spare subject. My gall-bladder has been tied to the abdominal walls, and I have been conscious of no trouble from it. If anyone ought to experience uncomfortable dragging from a contracted gall-bladder stitched to the abdominal walls, I certainly ought to be counted as one of them. As it is, I have never had a single instance of discomfort following the operation that could in any wise be associated with the gall-bladder procedure.

As to the method of performing it. It is objected to by some that a permanent fistula results from attaching the gall-bladder to the abdominal wall in many instances. Courvoiser assumes that most operators attach the gall-bladder directly to the skin, which is a decided technical error in the performance of this operation. If a surgeon has to do an operation for the purpose of removing stones, then secure drainage, he must attach the gall-bladder either to the peritoneum and intervening aponeurosis, or he had better not attach it at all, but trust to drainage and packing about the drainage-tube with gauze. Either seems to be sufficient in the majority of instances, but, for reasons I have already stated, a simple operation is better than an operation in two stages, so generally advocated by many German operators. I consider it a decided retrograde movement. It seems to me folly to expose a patient

to two operative procedures when one will thoroughly suffice. Any person can protect the abdomen so as to prevent infection of its cavity while engaged in any necessary procedure upon the gall-bladder or the associated ducts.

As to cholecystectomy, I have taken decided grounds against it, and the only justification for the operation is in cases of gangrene of the gall-bladder, or malignant disease, or in an occluded cystic duct.

As to incision of the gall-ducts with or without suture, it is perfectly justifiable, and in many cases the only kind of operation which will correct the condition which we find. It has been repeatedly done by many operators. My friend, Dr. Elliot, of Boston, has done it in a good many cases, and one of the technical procedures which he lays great stress upon is that of introducing sutures into the duct before extruding the stone, laying bare the stone by a free incision, introducing the sutures through the open walls of the duct where you feel the stone or stones within, opening out the duct, thus giving you ready access to the edges of the wound. This is a great advantage in these operations. I have not as yet been obliged to excise the stone. I have crushed a stone in the common duct in two instances by forceps external to the duct.

With reference to cholecystenterostomy, I believe it is a thoroughly suitable operation in a limited class of cases. I do not think I can ever be persuaded to believe it is good surgery to perform such an operation for the purpose of side-tracking the gall-stones and leaving them in the common duct. If the patient's condition does not admit of the removal of all the stones, it is better to do the simple operation of drainage, so that the patient may recover strength, and subsequently you can attack the stones *in situ*. Under no circumstances attach the gall-bladder to the intestines by button or suture and leave the stones which may be the exciting cause of malignant disease of the liver and gall-ducts, brought about by the exciting action of the gall-stones.

So far as my acquaintance with medical literature and the cases I have seen operated on by my friends is concerned, I know of no recurrences. I have known a number of instances where soon after the first operations there have been attacks of colic, but it was soon after the operation, and was evidently due to incomplete operation, the stones being overlooked at the time of the primary operation.

Free healthy bile in the peritoneum is not necessarily dangerous, as it is commonly and erroneously believed. There are two cases in medical literature showing that free bile, which does not contain infective micro-organisms, is tolerated in enormous quantity by the peritoneal cavity. One case is recorded by Arbuthnot Lane, who operated on a child that

was run over by a dray, with the result of rupture of the gall-bladder, and from whose abdomen he removed something like nine pints of bile, with a perfect recovery following. A similar case occurred in the practice of Thiersch, late Professor of Surgery at Leipsic, which also recovered. These two cases show that under similar conditions, at least, the healthy peritoneum will tolerate a considerable amount of bile which we have reason to believe is in a perfectly healthy condition.

With regard to the diagnosis of gall-stones, as a result of long-continued observation in my own case, I believe that the most important factors in the diagnosis of gall-stones are, first, the sudden pains usually occurring in the epigastric region in the vast majority of instances, with associated tenderness of liver and gall-bladder, and clayey stools. In my own observation the associated tenderness increased with the violence of the attack over the gall-bladder, and even in the throes of an attack of bilious colic I have been able in times past in my own case repeatedly to observe that while the agonizing pain was epigastric, the tenderness was increasing along the edge of the liver and exquisite over the gall-bladder.

Dr. James F. W. Ross, of Toronto.—It seems to me the points required to be brought out more particularly than any others are those in connection with the surgery of the ducts. The surgery of the gall-bladder itself is finished. It is something that we understand. But the main points that we want to decide are as to the nature of the bile when it escapes into the peritoneum, and, if it is poisonous, how we are to deal with it. I have on one occasion incised the common duct. The stones were caught somewhat in the manner represented by Dr. Murphy. There was one stone, a small one, with a broken-down condition all around it and the mucous membrane eroded. In the duct further up there were two other stones. The gall-bladder was so bent down that even to get sight of it I was obliged to lift the liver to dissect off the adhesions. There was free bleeding. It was extremely difficult to reach the gall-bladder area at all. I made an incision over the duct, removed the stone, and then stripped out the other two stones. I sutured the tissues, but these tissues are oftentimes so rotten that it is impossible to suture them with anything like effect, for the sutures will give way. I drained with a glass drainage-tube and with gauze, and the patient was put back to bed. Bile flowed freely through the tube. This was carefully drained. Notwithstanding this, after the onset of severe chloroform retching bile escaped through the wound, symptoms of collapse set in, and the patient died. No post-mortem was permitted, so I cannot say whether the patient died from peritonitis or shock. I think shock had a great deal to do with her death, but was this shock

due to extravasation of bile or to the operation itself? The case of Dr. Davis, in which he incised the common duct, also died, but from cholemia. It can scarcely be safe to allow bile to escape into the peritoneal cavity.

A very valuable article on this subject was printed some time ago in the *British Medical Journal*, in which the different areas for drainage of the abdominal cavity were mapped out. It was shown that underneath the liver there is a cavity that will not drain, and those who have explored for ascitic fluid in the peritoneal cavity must have noticed it. When the rest of the cavity is drained it is necessary to sponge out that cavity. This cavity will hold more than the cavity of Douglas. And we have one cavity under the spleen and the other under the liver. The physician writing this paper alluded to came to the conclusion that what we ought to do in dealing with these cases was not to drain from the front, but to make a second incision and drain lower down on the side. He claims from experiments on the cadaver that this pouch could be readily drained. When we drain from above there is danger of extravasation of the bile into the rest of the general peritoneal cavity. The operation, as advised by him, means a second incision in the loin large enough to permit a drainage-tube to pass through. In my cases I did not drain through the loin. I do not know whether the result would have been different if I had done so or not. I mention this fact, and it may be an interesting subject to consider. Should we drain from the lowest point in this cavity, or should we drain from the front, if we fear extravasation of bile after incision into and suture of the common or cystic ducts?

For the operation of cholecystenterostomy our esteemed Fellow, Dr. Murphy, will improve his button. I am satisfied that the danger from the use of the button is that it may be lodged in the gall-bladder. We had one such case in Toronto, and the patient died. If a little flange is put on the portion of the button that is to go into the bowel, that danger can be readily obviated. Dr. Murphy, with his inventive ability, will certainly be able to improve his button for this purpose. Certainly, it is the most valuable device we have for anastomosis between the gall-bladder and the bowel. In one case I used the elastic ligature. It cut its way through tissues, left no opening, and the patient was not benefited.

Regarding fistula, I had one case of fistula remaining after operation. The patient, when lying down at night, had extravasation of bile, but during the day, when standing up, she never had an extravasation of bile. There was no obstruction of the common duct, and I had no hesitation in firmly suturing the fistulous opening. I did not do a

cholecystenterostomy in that case, as I did not consider that it was indicated as there was no obstruction of the common duct. Therefore I sutured the edges of the fistula, intending if that was not successful, on a subsequent occasion to perform a cholecystenterostomy. I presented the young lady to our local medical society in Toronto before and after operation. It has been successful. The fistulous opening has been closed. To close such a fistulous opening in the presence of obstruction in the common duct would be dangerous to the patient.

Dr. Rufus B. Hall, of Cincinnati.—I desire to emphasize the remarks of Dr. Ross by saying that practically the technique of the surgery of the gall-bladder has been completed, but not that of the ducts. I am strongly inclined to the opinion that the profession will adopt a very different plan of dealing with stones in the gall-bladder. There are cases in which the old operation of stitching the gall-bladder externally will be preferred by many operators, and other cases where the anastomosis with the intestine will promise advantages over any other procedure. I am convinced of this, but there is bound to come to every operator in this line of work complications in any given operation which cannot be foretold until you open the abdomen, and hence any fast-and-hard rules of procedure cannot be laid down. It is not necessary to emphasize that point in the presence of men who have made many of these operations. There are cases in which anastomosis to the intestine with the Murphy button, which I consider the method par excellence, is simply impossible.

Not long ago I operated upon a patient who suffered for twelve or fourteen years from recurrent attacks of colic until life became such a burden to her that she asked to be operated upon, let the risks be what they would. Her husband then, for the first time, consented to have an operation; while the patient had for a long time desired an operation done, but her friends would not consent to it. The gall-bladder in this instance was not as large as the little finger and less than two inches long. It was packed so full of stones that it felt to the finger as one stone. There were three hundred stones found in this little gall-bladder. They could be easily recognized. When the stones were removed there was no gall-bladder, it had entirely broken down under the necessary manipulation. This case had a stone in the common duct blocking it up. When this stone was removed the bile flooded the field of operation. To put the patient to bed with this stone in the common duct I did not feel it my duty to do, so I cut the stone out and it appeared to be one, but there were four around it. The patient had jaundice at times which lasted for three or four days when the swelling came on. Then the stones in the common duct shut off

the bile completely until the swelling disappeared. When not enough bile was allowed to pass the jaundice would appear. I stitched the duct, and it was done with some difficulty. I placed a glass drainage-tube and packed around it with gauze to the best of my ability, and when I put her to bed I felt that the patient would get well. She vomited from the time she commenced to regain consciousness for ten or twelve hours. The bile was removed through the drainage-tube. Suddenly she developed general peritonitis and died. The abdomen was found flooded with bile, there being two or three pints of fluid in the peritoneal cavity. The quantity of bile removed up to the time of death through the tube and gauze was simply surprising. It was more than in any patient I had ever operated upon. So it is a question whether it would not have been better for the patient to have made some other provision for operation. I will say in reference to the technique of the operation in this case, that I took a piece of soft-rubber tubing to fit into the end of the gall-bladder, fastened it with one stitch of catgut, packed around it with gauze, bringing it up out of the cavity, so that I could cover it all in with gauze.

In another case in which the patient was profoundly cholemic, in a dying condition, I removed a stone from the common duct, as well as some seventy-five or eighty comparatively large ones from the gall-bladder. The gall-bladder was considerably distended. The operation was made a few days after I had heard a paper by Dr. Davis on this subject. The patient lived seventy-two hours, and died of her pre-existing cholemia. Autopsy showed that there was no bile in the peritoneal cavity. She did not have peritonitis. So far as the operative procedure was concerned, it was all that could be desired. Around the gauze, which was not yet removed, everything presented a favorable condition. The bile came through during the operation. My experience is that when we get down to the hepatic duct bile floods the operative field during the operation.

While I am not by any means anxious to place my unfortunate cases on record, I think for the good of the profession we should all of us record our unfavorable cases. I feel certain that the cause of death in the first case referred to was due to flooding of the cavity with bile. If the patient had not vomited constantly from the start, thus giving Nature a chance to wall off with lymph, I believe she would have recovered.

I think we should be very careful about making positive statements as to finding stones in the hepatic duct and substance of the liver. Some of us may be called to account in an unpleasant way, namely, for leaving gall-stones behind. A case is on record by the pathologist

in the Cincinnati Hospital of a patient dying from gall-stones without an operation. There was no diagnosis made, perhaps, in this case, but anyhow the autopsy showed stones in the periphery of the liver and in the minute ramifications of the hepatic duct. There was a considerable number of stones found near the surface of the liver. In conclusion, I would emphasize the point made by Dr. Seymour, that, from a diagnostic standpoint, in every case coming under my observation, without a single exception, the pain has been definitely referred to the median line, the tenderness being along the region of the margin of the liver or directly over the gall-bladder. I need not tell you that some of these cases are treated for months and years for neuralgia of the stomach, indigestion, etc. If we have a case in which we suspect gall-stones, these two symptoms will give us a cue for a probable or provisional diagnosis.

Dr. L. H. Laidley, of St. Louis.—My remarks will be as limited, as my experience has been, in the discussion of this subject. I recall one case which demonstrates the points brought out by Dr. Seymour, likewise concurring in the report made by Dr. Ross. The patient had the typical symptoms as described by the preceding speakers, the pain being located in the region of the gall-bladder, about the end of the twelfth rib. The tenderness was not greater at that point than at others. The pain would radiate, and we could not centralize it in the region of the gall-bladder at all times. Under the influence of an anesthetic a tumor-like body was found extending from where we expected the gall-bladder to be down to a point below the umbilicus, on the right side near the liver. To me the history was so obscure that nothing but an incision would determine the true nature of the trouble. An incision being made, the gall-bladder was found distended probably four or five inches, cone-like in shape, filled with fluid, and in the fluid there were three or four hundred small particles of stone, represented by sand, some of the particles being as large as a pea. The distended gall-bladder was attached to the peritoneal covering, and there was no attachment made to the structure outside of that. The cavity was washed out, and the patient made a favorable recovery. Some weeks or months afterward the patient sent me some particles of sand-like stone which came from the cavity, and in this connection I will say that I had identically the same experience as that given by Dr. Ross in his case, that when my patient was lying down there was a slight escape of bile, while during the daytime there was a small quantity of whitish fluid which escaped. The patient came back from New Orleans to have a second operation performed, thinking probably that it would relieve her from the unpleasantness of a constant dis-

charge. There was a notable absence of cholemia in this case, as in four others that I have operated on. All recovered. In my service in the Protestant Hospital in St. Louis I have seen three other cases that were operated on, which died a few days afterward, and in every instance marked cholemia seemed to be the cause of death. Patients in this condition cannot stand an operation, and when operated upon succumb within a few days thereafter.

Dr. A. H. Ferguson, of Chicago.—A good deal might be said in connection with the cause of gall-stones and their relation to germs, which I think will be established at some future time. There are many points in connection with this subject that we might profitably consider, such as pain, tenderness, jaundice, etc. I do not consider jaundice so grave as the pyrexia which may follow it. I look upon pyrexia coming on after jaundice as a much more grave symptom than the jaundice itself.

The indications in reference to the surgery of the gall-bladder, as pointed out, are simply to drain the gall-bladder and remove the stones, or to do a cholecystostomy. The latter operation is simple. You suture the gall-bladder to the upper angle of the wound to the peritoneum and not to the skin. Suturing to the skin favors biliary fistula. A number of cases of obstruction in the common duct by stones have been reported, but when we look at the statistics and carefully consider them, we find that at least 75 per cent. of the stones are found in the gall-bladder itself, 12 per cent. between the gall-bladder and cystic duct, 8 per cent. in the cystic duct alone, only 3 per cent. of the cases of cholelithiasis where the gall stones are found in the common duct, and then the other 2 per cent. is scattering.

With reference to the removal of these stones there are one or two points to which I desire to call attention, and one is the manner in which the stones should be removed. I do not think that they can be removed easily with a pair of forceps. I have utilized a uterine curette filed to $\frac{1}{3\frac{1}{2}}$ of an inch for their extirpation. In the last case operated on I removed three stones, two of which were in the common duct. These were quite large. I removed forty-three altogether. Having removed the stones as far as one can reach, the next point to determine is the permeability of these ducts, which you can do either by probing or flushing with water. The latter has not been mentioned in the discussion. Probing the normal ducts is a difficult thing, and I may say that you will fail in 50 per cent. on the cadaver. On the operating table, where the ducts are dilated pathologically, the operation is not so difficult. A very useful probe is an olive-pointed urethral stricture searcher, as you can bend it in any shape, and the arrangement of the

mucous membrane of the common duct is such that it will follow in the proper direction much more easily than would a straight probe. My five minutes are now up.

Dr. T. J. Maxwell, of Keokuk.—I have a paper I shall read to illustrate the troubles that follow stitching the gall-bladder to the abdominal wall. I want to say that catarrh of the gall-bladder will produce all of the symptoms that gall-stones produce. I had a case of that kind in which I opened the abdomen, expecting to find gall-stones. I found the gall-bladder full of inspissated mucus and bile. The gall-bladder was not very much distended, and in manipulating it, in order to discover whether or not there were stones in it, suddenly the fluid escaped from the gall-bladder into the common duct, and I closed the wound without doing any further operation. The lady recovered and remains well.

Dr. William H. Myers, of Fort Wayne.—In 1892 I reported a case on which I operated for gall-stones. There was obstruction of the cystic duct from adhesion. In that case I regret exceedingly that I did not remove the gall-bladder by excision, which I thought would have been better. There was a biliary fistula after the operation, which has continued ever since, much to the patient's and my own annoyance.

Dr. Davis (closing the discussion).—The ground has been so thoroughly covered by the Fellows who have taken part in the discussion that there is very little left for me to say. I believe that you agree with me that the operation of cholecystenterostomy has a limited field, because the majority of cases of obstruction in the common duct can be relieved. Otherwise, in those cases where there is a stone present, the patient would be left in a condition which would necessitate another operation for the removal of the stone. It is certainly a serious thing to have to undergo a second operation of so much gravity in order to be relieved of a condition which should have been removed at the first operation. Besides, it is a very difficult matter to reach the duct after the intestine has been attached to the gall-bladder. Yet if the obstruction is due to stone, the patient's life is in danger until it is removed. By adopting the operation which I have suggested the patient suffers but little shock, as only a short time is required to complete the operation. You incise the duct on the finger, introduce a glass drainage-tube, pack gauze around it, and the operation is completed. These cases of extreme cholemia should not be subjected to a protracted *suturing* operation.

When I presented my paper in 1892 before the Surgical Section of the American Medical Association I reported experiments which I

had made on animals, in which I incised the gall-bladder, drained with gauze, and the animals got well. It was said then that bile was not dangerous, and that if I had not drained the animals would have gotten well. My observations show conclusively that it is a serious thing to have a great quantity of bile extravasated into the peritoneal cavity. Cases may recover where there is leakage from the gall-bladder or the ducts, but where there is much extravasation the patients get well by the walling off of the bile and its passage through the common duct into the intestinal canal. The condition simulates very closely the protective adhesions around the Fallopian tube after the rupture from an ectopic gestation.

Dr. Seymour states that the condition of gall-stones is often congenital. I think that patients are often born neurotic and that such patients are subject to catarrh of the stomach and duodenum. If you have catarrh of the duodenum, you get an extension of this condition to the common duct, which will favor gall-stones.

Dr. Hall reports cases in which he has followed the treatment which I have recommended, and cites a case of peritonitis following the operation. I think the technique of the operation was not perhaps what it should have been, or there was some infection of the peritoneal cavity before he began the operation.

THE USE AND ABUSE OF THE UTERINE CURETTE.

By WALTER BLACKBURN DORSETT, M.D.,
ST. LOUIS.

As we advance step by step along the pathway of the science of medicine and surgery we leave behind us at each resting-place some remedy which in its day was extolled and in which the utmost confidence was once placed. And as the study of general medicine has advanced, so has gynecology. Old remedies have been discarded for new and seemingly more potent ones. Instruments are thrown aside for others fashioned to meet the demands and exigencies of the hour, according as the theory or experience of the inventor may deem proper.

Experience has shown us, by the teachings of those who have gone before us and those who are yet zealously working in the field with us, that the demand for new remedial agencies goes hand-in-hand with discoveries that are constantly being made in the collateral branches of medicine. Whether this demand be in operative work or the administration of a new drug it matters not. So rapid has been the advancement in medicine and surgery that we are often, in our desire to keep pace with the procession, apt to overlook some good thing which has been given us by a worthy predecessor. When Récamier in 1849 introduced the uterine curette to the profession it was probably not appreciated. The proper application of it at a day prior to the knowledge of antiseptic surgery was, of course, impossible; and only within the past five or six years has it found just recognition in the ranks of the gynecologists as well as the general surgeons, so to some it may be considered a work of supererogation to prepare a paper on the subject indicated by the above title. The question as to the application of the different forms of the instrument is settled so far as their individual views

are concerned. By way of apology or explanation to such persons I will say that the more I use and see used the uterine curette the more I am impressed with the following ideas :

1. When used the selection as to the shape and form of the instrument in a given case is not always a wise one.

2. That a proper knowledge of its use should be obtained before trying to use it.

3. That it is not a cure-all. Its use should be only in conjunction with other treatment.

As to the mechanical construction of the different instruments now sold in the shops, I regard none so dangerous as the blunt curette. Given a case of retained necrotic placenta with its accompanying inflamed seat of attachment, one in which life is endangered by the probabilities of septic intoxication, by the application of the dull instrument in our efforts to clean out the septic cavity we can do nothing—but harm. The same may be said as to its use in other pathological conditions ; and I may venture the assertion that where good results have followed the use of the blunt instrument in such cases it has been through the agency of the antiseptics used or the preliminary dilatation of the cervix to secure drainage, or the two conjointly, never through the agency of the dull or the blunt curette. It is not what its name implies: an instrument with which scraping is done. No dull or blunt instrument can scrape. Were I asked to select from the stock of any dealer in our land an instrument best adapted for rubbing or pressing septic matter into an inflamed surface, I do not think I could select a better one than the blunt curette—one that was intended by its author to have no cutting-edge. The idea as to the efficacy of this form of the instrument has for some reason taken hold of the profession at large, and those who do but little gynecology and are prompted by a desire to do something, through timidity in using a cutting or scraping instrument have, without sufficient reason, placed themselves on this side of the question. To them the man that would use a sharp scraping instrument is considered a dangerous member of the community, and should, through the agency of unforeseen or unavoidable circumstances, bad results follow his operations, they are ready to have him censured by the coroner or indicted by the grand jury. When we consider that in endometritis—simple, acute, chronic, septic, catarrhal, one due to neoplastic growths or where they are present

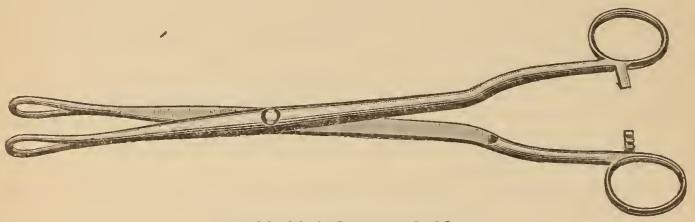
—we are liable to have pathogenic agencies ensconced in the rugæ of the vagina, or already have gained entrance into the uterine cavity and are simply waiting an opportunity to gain entrance to circulation, lymphatic and blood, we certainly should not help them on their way by pressing or rubbing them into the tissues with a blunt instrument where they can be taken up and ultimately often produce dire results. This we certainly are liable to do should we resort to the use of the dull curètte. It certainly is then, to my mind, a dangerous instrument and should never and under no circumstances be used either by the experienced or the inexperienced practitioner. It has no place in the armamentarium of the modern surgeon.

The Sharp Curette. The instrument with a sharp cutting-edge, properly constructed, is a most useful instrument, and in the treatment of intrauterine inflammatory conditions is the *sine qua non* of success. In order to secure a good scraping instrument the sharp edge should stand at an angle of sixty degrees to the shaft or handle; a greater angle will not scrape thoroughly, and a less angle is liable to incise the uterine wall, unless used with a great deal of care. It is a deplorable fact that the ordinary physician pays little attention in the selection of this instrument, and the instrument manufacturer cares not so long as the sale of so much stock is remunerative.

Cases of perforation of the uterine wall are on record. They are rare, and to my mind are due to want of proper care on the part of the operator in the selection of his instruments. The curettage of the uterus is regarded by the profession as a minor operation. This is unfortunate, as it allows the merest tyro to attempt its execution. No operation requires greater attention to detail, not only so far as the operation itself is concerned, but also to the preparative and after-treatment of the patient. No operation requires more delicacy of touch and a more careful manipulation of the instrument—to know just what you are to do and then do it properly.

In Abortion. These are the cases in which the blunt instrument is probably more frequently used, either in conjunction with the placental forceps or the intrauterine douche-tube. The placental forceps as they are found in the instrument shops are, as a rule, worthless instruments, and some of them are positively dangerous. The curette forceps are no better. The blades of these instruments

(the placental forceps and curette forceps) are fenestrated, concave, and have serrated edges, and are admirably adapted to crushing off small tufts of placental tissue and to wounding the uterus, and if much pressure is imparted to the grasp of the instrument they do not extract the placenta but simply bite off small pieces. The double-bladed sponge-holder I show here is a much superior instrument.



Double-bladed sponge-holder.

Curettage after Abortion and in Post-puerperal Septic Conditions. This is indicated in retained placenta with septic symptoms, and in order to secure a proper performance and a successful termination of the operation it should be done with the most careful observance of antiseptic rules. To this end the patient is placed in the left lateral position and the uterine neck exposed to view. This should be obtained with a vaginal speculum—the Sims instrument to be preferred, unless the perineum has been badly wounded; if so, then any bivalve that will expose the parts. The vagina should be thoroughly scrubbed out with a hot bichloride solution of the strength of 1:2500, and an intrauterine douche of the same strength should also be given, the uterine neck drawn down by a suitable catch forceps and the fenestrated double-bladed sponge-holder introduced, and the placenta located and as much of the tissue extracted as possible. Then with the sharp curette the *placental site only* should be gently but thoroughly scraped; this is followed by an intrauterine douche of a solution of bichloride of the strength of 1:2500 or 1:3000; then, with the introduction of a folded strip of iodoform gauze passed up to the fundus of the organ and left hanging out of the cervix, and the vagina loosely packed with sterilized plain gauze or aseptic dry cotton, the patient is put to bed. This should end the toilet for the day. It is seldom necessary to repeat the operation. The dressing is removed after forty-eight

hours, and an intrauterine douche given daily for three days afterward will, except in rare cases, be all that is necessary.

In Endometritis, acute. Topical applications, hot vaginal douches taken in the recumbent posture, and a proper attention to the emunctories, should be the treatment. The curette, sharp nor blunt, is not indicated.

In Endometritis, chronic. The classifications of this form of intrauterine inflammation are so varied by different authors that to describe the pathological lesions would be an endless and, in order to speak of the use and abuse of the uterine curette, an unnecessary task. Suffice it to say that to my mind the use of the sharp curette is *always* indicated in chronic endometritis. No treatment has as yet been followed by as good results in my hands. The following is the technique of the operation: The patient is anesthetized, chloroform being the choice of anesthetics, and placed in the left lateral position on the operating-table. The perineum is retracted by a Sims speculum, and the uterus is drawn down by means of the volsella forceps. A curved Hagedorn needle carries a strong silk thread through the anterior lip of the cervix, which is tied in a loop and held by the left hand of the assistant, who makes gentle and steady traction toward the pubis. This steadies the uterus during the operation better than it can be done with any forceps, and has the advantage of not taking up much needed room in the vagina. The vagina having been well cleansed, rapid dilatation is now performed. The cervix is first dilated as far as possible by means of a two-bladed dilator, and subsequently a three-bladed instrument is introduced and the cervical canal is stretched until it measures three-fourths of an inch in diameter. The intrauterine douche-tube is now introduced and the endometrium is well bathed with a hot 1:3000 bichloride solution. A diamond-shaped sharp curette of small size is now introduced into one or the other uterine cornu, and these pockets thoroughly but gently scraped out; then the fundus is attended to in the same manner, and last the anterior and posterior walls and right and left sides. The sharp curette, of different sizes and shapes according to the location to be scraped (being the only instrument for scraping), is used.

As was stated in the beginning of this paper, the scraping alone will not suffice. The uterine cavity is now swabbed out with pure carbolic acid, care being taken previously to protect the vagina from

cauterization by the excess of acid apt to follow the withdrawal of the swab, by packing pledgets of absorbent cotton around the cervix. The application of the acid insures a thorough antiseptic cleansing of any shreds of the mucosa that may be left after the application of the curette. After the lapse of a minute a dry swab of cotton is then introduced to absorb the excess of acid and to bring away shreds that have been detached by the curette and are lying loose in the uterine cavity. The cavity is then douched out with hot sterilized water and the uterus packed with a gauze strip torn lengthwise of the fabric. The loop of thread previously introduced into the anterior lip is coiled behind the cervix and the vagina is loosely packed with fluffed gauze. This completes the operation.

The intrauterine packing is removed after forty-eight hours and the uterus again washed out and loosely packed again. This will generally suffice in ordinary cases. Beneficial results do not follow this treatment till after three and sometimes five months; this is probably due to length of time required for a thorough regeneration of the endometrium. The periodicity of the menstrual function is often interfered with for a time; but when it once becomes regular, dysmenorrhea, menorrhagia, and the nervous phenomena which frequently accompany these conditions exist only as recollections of the past. Sterility and the habit of aborting, when both are due to follicular or other forms of endometritis, are cured.[1]

Extrauterine Inflammation. Great stress has been laid on the statements of some gynecologists that under no circumstances should the curette of any kind be used when there is any inflammatory condition present in the adnexa or in the subperitoneal intraligamentary space.

I am confident that in the chronic periuterine inflammations, except in very advanced stages where the structures are already breaking down, no damage will follow curettage and packing, unless consequent upon inexcusable clumsiness and undue force on the part of the operator. No jerking or pulling of the handle of the curette is necessary. The instrument should be sharp, and the operator is to remember that the endometrium is a thin membrane and it is not necessary to dig into the sides of the organ in order to thor-

[1] The writer has now three cases of previous sterility in which this treatment has enabled the women to become happy mothe rs

oughly denude it. It should be scraped off in flakes and *not dug out in chunks.* By first denuding the organ of its lining and then packing it with iodoform gauze a process akin to endosmosis is brought about, as evidenced by the serous-like fluid which saturates the gauze and flows out of the os when the first dressing is removed, as well as the disappearance of the periuterine inflammatory lumps. In the curettage of the organ for the relief of pus-sacs in the Fallopian tube near the uterine horn, by the denudation of the uterine walls, and by careful attention, in this direction, to the cleansing out of fungosities here situated, previously impervious tubes can be opened up and drained.

Deductions. 1. The dull or blunt curette should never and under no circumstances be used.

2. The curette forceps and ordinary placental forceps do not remove placental tissue satisfactorily.

3. The sharp curette with cutting edge placed at an angle of sixty degrees to the handle of the instrument is an efficient scraping instrument, but should not be used except in conjunction with antiseptic douching, dilatation, and drainage.

DISCUSSION.

Dr. A. Goldspohn, of Chicago.—I am glad to see that this topic in minor gynecology is receiving the attention of this body. It means that the gynecologist is not simply to perform major operations, but he is also to scrutinize carefully the choice and proper use of prophylactic minor means, which are able to rectify minor grades of gynecological disease when *correctly* applied, but are also prone to invite major pathological disorders when *misapplied.*

Hardly anywhere is greater harm done so frequently when good was intended, as in the case of injudicious or incompetent curettement of the uterus. I differ radically from the speaker in some of the things he has said. I will say that in the subject under consideration there is a wide difference of opinion in regard to the simple technique and mechanics of curettement, not only in this country but abroad, and it is attested by the fact that only last year a bright young German—whose name I cannot recall now—made a long series of observations and investigations on uteri that were recently curetted and obtained

after death, death occurring from some other cause, or the curettement was done incidentally with some other operation and the patients dying from it. There were ordinarily few instances where uteri could be obtained post-mortem within a week after curettement. From these uteri he made a careful microscopic study of the mucous lining and noted where the imperfect scraping occurred, which was in the fundus and the cornua of the endometrium. When we bear in mind that the uterine cavity is not a fistula or sinus, but a triangular space with three more or less rounded borders and crypt-like recesses at each of its upper angles where the tubes are inserted, it becomes self-evident that the expanded anterior and posterior surface of this space are readily enough reached and attended to by following the directions of the speaker or by anybody's curettement, for here the slight or imperfect scrapings do not occur. But the difficulty comes at the upper small side or border of the triangular cavity and at its termini—the tubal angles. Here the defects in curettage are very frequent. This upper border or bottom of the uterine cavity stands practically as a surface line, at an angle of 90° to the shaft of any curette, and it is, therefore, evident that no scraping at all, aside from mere rubbing, can be done there by a curette whose cutting edge stands at an angle of 60° to its shaft. Even 90° would not scrape. An angle of 140° to 150° is required, as in a surgeon's bone spoon or scoop, which, if mounted on a slender bendable shaft is the best instrument to use in this the first part of the operation. The conclusion of the investigator alluded to is, that the reason why in so many instances a curettement does not yield conclusive curative results is because the endometritis is regenerated from the diseased portions of mucous membrane that have been left in the fundus. It is not possible to curette a uterus perfectly with any one instrument. I am sorry my time is limited, otherwise I would make more extended remarks. But I desire to say that the profession errs in not making a sufficient distinction between the puerperal and non-puerperal uterus.

Dr. H. W. Longyear, of Detroit.—I agree in the main with the deductions of Dr. Dorsett's paper, especially in the use of the sharp curette, and the point brought out by the last speaker, that a distinction should be made between the puerperal and non-puerperal uterus. I do not believe it is always necessary to remove secundines with the curette after an abortion. The instrument shown here means a formidable operation to the patient. Where the secundines are retained they can be easily cleaned out without pain to the patient, without assistance, and without an anesthetic, if we have the proper instrument with which to do the work. The author spoke of the curette forceps.

I do not believe in that. I have an instrument of my own device something like the curette forceps, which is a little larger; the edge of the blades are rounded off so as not to injure the endometrium, and with it I am able in all cases to clean out the uterus perfectly without injuring the organ and without pain. I put the patient in the dorsal position, and use the instrument without speculum or tenaculum. The instrument can be used in cases of very slight dilatation. After the secundines are removed with my instrument I use a intrauterine douche.

Dr. Edward J. Ill, of Newark.—If I understood the doctor rightly, he spoke of the danger of perforating the uterus. So far as I know, all of the reported cases of perforation with the curette have occurred at the fundus only. It is no doubt largely due to the form of instrument used, pushing the instrument too far forward. All cases of perforation that I have seen or heard of have all occurred in puerperal uteri and could have been easily averted.

Dr. J. Henry Carstens, of Detroit.—I wish to say a word or two in regard to curettement. It seems to me that in a puerperal case we should use a blunt instrument, because we do not scrape everything away and open the lymph channels for infection. In the non-puerperal uterus we scrape away practically all the tissue we can and always use a sharp curette.

Dr. Dorsett (closing the discussion)—I made the point in my paper that a blunt curette is never applicable in any case, and that it has no place in surgery; and I reiterate again and again that when you attempt to clean out a septic cavity with a blunt curette, the more you rub and try to scrape, the more you press the septic matter into the uterine wall where it can be absorbed.

In regard to the criticism made by the first speaker (Dr. Goldspohn), he says that an oblique angle would be the angle to clean out the fundus. You will remember I said that the woman was placed in the left lateral position and the cervix dilated to a considerable degree. When we dilate the cervix we can depress the handle of the instrument, so that the cutting edge scrapes every portion of the uterine wall.

In regard to Dr. Longyear's remarks, I will say that his instrument differs a little from this. My instrument is not large, and it is not necessary to have it curved on the flat or on the side, because in taking out a piece of retained placenta the operator should always see what he is doing. You can put the woman on the side, draw her up to the light, draw up the perineum, draw down the uterus, and with an instrument like this you know with a greater degree of certainty as to what you have in the grasp of the forceps. There is a good deal in

extracting a piece of placenta. I have seen some surgeons take hold of a piece of placenta with the placental-forceps and pull off a chunk, and after using the placental-forceps it will be found that it is brought away in bites at every withdrawal of the instrument. Let the placenta be drawn down to the os with some instrument that does not crush it, and when a tearing sensation is imparted to the hand let go and take a new hold of the placenta, and so on until it is brought away *en masse.*

In my judgment, the placental-forceps as found in the shops with concaved serrated edges should not be used under any circumstances. I prefer the left lateral position of the patient, because you are less liable to do injury to the maternal parts, and the subsequent intra-uterine medication and dressing is more easily accomplished. The patient is, of course, brought before a good light and the parts are exposed and viewed by the operator as in gynecological work.

SOME ANOMALIES FOUND IN ABDOMINAL SURGERY.

By THOMAS J. MAXWELL, M.D.,
KEOKUK.

When we received our medical and surgical education the peritoneum was looked upon as forbidden ground. Death brandished his dart and threatened destruction to every poor victim who by accident or otherwise should have this "terra incognito" invaded. Things since then have all changed, the world is turned upside down, the sacred precincts of the peritoneum have become—Dr. Price says—"The fools' paradise."

It is an easy thing to remove an uncomplicated ovarian cyst, and the looker-on concludes that this is the highway for a young man to travel to honor and distinction. I would warn the neophite who thinks that way to pause, and ere he begins be prepared for any emergency. First, study the various complications, make himself familiar with the best way to deal with them, and have at hand the instruments and appliances to carry out the various technique necessary for each.

It is to these byways and anomalies complicating abdominal work that we wish to call your attention.

Case I.—Miss M. S., aged fifty-seven years, rather above medium height, spare habit and blonde complexion, menstruated first at thirteen years of age, passed the menopause at fifty-four years of age, and health began to fail about two years before cessation of menses.

History for six months previous to operation: Appetite poor, bowels constipated, nervous system irritable, sleep broken and unsatisfactory. Tumor developed in right iliac region gradually and filling abdominal cavity; no clear signs indicating hydroperitoneum, but slight wave on succussion; distressing, indescribable

pain in region of right ovary, reflected to the stomach, causing nausea and coming in periodical paroxysms. The above history was furnished by Dr. McKibben, of Keosauqua, recently deceased.

I saw the first case in July, 1889, at the Ladies' Home. There was fluctuation with dulness over the upper and anterior part of abdomen that did not shift with change of position (inference, fluid in sac). In the lower and central part of the abdomen the tumor seemed to be firmer and fluctuation absent or obscured—might be multilocular. Os uteri slightly larger than normal, and sound could only be passed two and one-half inches backward and to the right, a common condition in ovarian tumor.

A rather firm elastic tumor could be felt through the vaginal wall when pressed upward; the whole abdominal contents seemed to move.

Incision made along the linea alba discovered a reddish tumor quite unlike the pearl-colored ovarian cyst. This tumor was about seven inches in diameter and proved to be the uterus containing an interstitial fibroid. An incision about four inches in length through the interior fundus was made and a white fibrous tumor of the dimensions of a cocoanut was shelled out or enucleated with the fingers. The incisions into the uterus were closed with buried catgut sutures, fortified with one silk suture in the centre of the cut.

A large ovarian tumor was then brought into view, attached by a very broad pedicle to the right broad ligament. The tumor was emptied of its contents—two and one-half gallons—and proved to be a monocyst.

The operator of today would have performed a hysterectomy. It is the first case where an interstitial fibroid complicating a large ovarian tumor was enucleated, leaving the uterus intact.

I am seriously of the opinion that many uteri and their adnexa might be preserved by a like procedure, and the woman be left unmutilated. The patient made a good recovery, and is now—six years after the operation—in good health.

Case II.—Mrs. D., aged thirty-three years, was a strong, healthy young woman, well developed, regular in her menstrual function, married ten years.

History: About eleven years ago she began to have some irritability of the bladder, manifest by frequent calls to urinate, with tenesmus of the bladder after each evacuation. There was no his-

tory of injury or inflammation of the bladder or uterus to account for the symptoms. The urine all the time remained normal. This condition grew gradually worse, with but short periods of respite until she became pregnant, seven years since, which rather increased the trouble than otherwise. She gave birth to a healthy girl baby, but found no relief during the puerperal and lactation periods. The poor woman was driven from society, church, and any other public or social gathering on account of the frequent and urgent demands to evacuate the bladder, suffering torture from the fierce tenesmus following each expulsion of the small amount of urine that the bladder would tolerate.

During the last twelve months this condition has grown worse, and she has experienced a feeling of increasing fulness and pressure in the pelvis. She told me she had passed many nights on the commode with her head resting on the side of the bed, getting only fitful snatches of sleep between the oft-recurring spasms of the bladder, at which time she felt as though she would force the contents of the abdomen and pelvis through the perineum. During these eleven years of suffering she had been treated by physicians of many places eager to relieve her; but drugs, electricity, pessaries, douches, baths, massage, and dilatation of the bladder three times under an anesthetic, all failed to give even temporary relief.

This was her condition when she applied to me for relief the first day of April, 1895.

I discovered that she had internal piles that sometimes bled, but this condition had only existed for three or four years, and was probably the result and cause of tenesmus. On examining per vaginam, the uterus was less mobile than normal, and upon lifting it upward, pain and a desire to urinate were produced. The base and neck of the bladder as palpitated through the anterior wall of the vagina were exquisitely sensitive. Bimanual pressure disclosed thickening in the right ovarian region and preternatural fulness of the pelvic cavity.

An exploratory operation was determined upon, first, to complete the diagnosis; and, second, to relieve the condition if possible. Under anesthetic I divulsed the sphincter ani and ligated the piles. Then putting the patient in the Trendelenburg position, I opened the abdomen and found the omentum drawn tightly down over the front of the bowels, and a large section of it anchored to the blad-

der, uterus, broad ligament, and abdominal wall on the right side. I ligated it by sections and cut between ligatures. I then carefully detached the stump from the bladder, uterus, etc., also separated the bladder from the uterus and broad ligament on the right side, to which it was held by rather feeble adhesions.

Further investigation disclosed a small ovarian tumor developing from the left ovary; it was snugly stowed away in the pelvis, behind the uterus; this tumor accounted for the increased pressure experienced during the last twelve months.

Patient recovered rapidly, irritability of bladder gradually subsiding until the last few days of her stay in the hosiptal she could sleep quietly all night without being disturbed by the bladder, a pleasure not enjoyed in eleven years.

Case III.—Mrs. S., aged forty-two years, married, multipara, had enjoyed good health until the last seven or eight years. She began to have spells of hepatic colic, until the attacks were merged into a continuous pain in the right hypochondrium, with development of a movable tumor which was variously diagnosticated as cancer, floating kidney, everything except its true character. The distress became so urgent that an operation was proposed and performed by Dr. Sawyer, of Centreville, Iowa, who discovered a large gall-cyst, filled with gall-stones; this he stitched to the abdominal wall and evacuated a large number of stones with inspissated bile and mucus.

The operation gave no relief from pain and burning in the abdomen, but they rather grew worse; finally Dr. Sawyer concluded that there must be a calculus in the cystic duct, the common duct never having been obstructed, as she had always been free from jaundice. To relieve this supposed condition he made a median incision, through which he could by the finger determine that the cystic duct was free; this incision healed kindly, but brought no relief.

Her intense suffering and hopeless condition unsettled her intellect, and she had a term in the Mt. Pleasant Asylum, and finally returned to her home an unmitigated sufferer. This condition continued until I saw her. She described her pain as an intolerable burning, deep in the right hypochondriac region, with an indescribable pain radiating from this central point through the chest and abdomen. On inspection of the abdomen I found three cicatrices, the third was from an operation to relieve a ventral hernia protrud-

ing through the abdominal parietes at site of the first operation. The original cicatrix was drawn deeply back, umbilicated like a depression in a mattress or cushion at the point where the button or tuft is drawn by its ligature. This was the site where the gall-cyst had been stitched, that viscus being too short to permit the abdominal wall to come forward to its natural position; so the whole weight of the abdominal wall was sustained by the imprisoned gall-bladder, the liver protesting against this hard tug by pain.

That was my diagnosis of the cause of the suffering; the proposed operation was to cut out the cicatrix, ligate the cyst and excise it. This I did by making an elliptical incision including all the scar-tissue. There were extensive adhesions of omentum and bowel to the cicatrix which required careful separation; this an operator must always look for in secondary operations upon the abdomen. I found the adherent cyst drawn as tense as a fiddle-string; I transfixed the cyst, now drawn out into a thin cord smaller than a little finger, ligated and drooped the stump into the abdomen. I closed the ventral opening, the borders of which had become widely separated by the long-protruding hernia, with plaited silk whipcord, endeavoring, if possible, to close the rent. This effort failed, and has caused more or less pain from which at last reports she was but little annoyed. The old burning, indescribable pain was at once relieved, and has not returned to plague her.

This case illustrates the possible, I might say, probable, complications liable to follow fixation of the gall-cyst to the abdominal wall—namely, pain from tension and ventral hernia through the unclosed abdominal wall. Cholecystenterostomy by means of the Murphy button or cholecystectomy would have avoided the sequelæ that I have failed in part to correct.

Case IV.—Mr. T., a young man, twenty-five years of age, school-teacher and farmer, strong, robust, plethoric habit, about December 15, 1894, began to have some uneasiness in the abdomen and applied to his home physician for relief. Cathartics were administered, which were rejected by the stomach; for ten days repeated doses of cathartics together with large injections of water were faithfully tried, but without avail. There was at no time offensive or stercoraceous vomiting, and bowels were absolutely quiescent. Finally, elaterium was given in full doses, but met with

like success. Christmas day I was called to see him, and found him in bed; pulse 100; temperature 102° F.; abdomen flat; no tympany, tenderness, or tumor discoverable. I was not satisfied as to the sensation conveyed to my hand on deep pressure of fulness on point about halfway between the umbilicus and lower border of the ribs and two inches to the right of the median line. Now here was a combination of symptoms which puzzled me: Obstruction of the bowels for eight or nine days, vomiting, but not stercoraceous, no tympanites or tenderness. Large injections of water had repeatedly been administered, but no fecal depots that could be discovered; abdomen flat and walls flaccid. At what point in the intestinal tract must the obstruction be located to produce this combination of symptoms? Gallstone obstruction, or cancer, or stenosis of the pylorus out of the question by history of previous good health. Fecal depot eliminated by large injections of water passing fully the entire length of the large intestine, and no discoverable tumor. The bowel must be obstructed near the stomach, as we would have a large accumulation of gas were the obstruction lower down.

There was no evidence of local or general peritonitis, no pain, tympany, or rise of temperature until the last two days, when the temperature rose to 102° F.

I opened the abdomen by central median incision and found the omentum and peritoneum covering the bowels bright, smooth, and healthy. Introducing the hand I could feel an abdominal fulness back of the stomach; bowels, large and small, empty. I drew out the small bowels, coiling them in warm cloths wrung out of sterilized water; as the jejunum was being withdrawn there was some difficulty experienced, some resistance or clinging, the bowel looked congested and the mesenteric veins were engorged. The resistance and clinging continued with increasing congestion of a dark color, until suddenly the bowel slipped from its imprisonment and the duodenum was reached. The congestion rapidly faded out, the bowel soon regained its normal color and fluid from the stomach and duodenum gurgled into it.

Digital examination failed to discover the former tumor back of the stomach. We came to the conclusion that the upper part of the jejunum had in some unaccountable way been forced through the foramen of Winslow. The imprisonment did not produce entire strangulation, its grip being sufficient to check but not to stop cir-

culation, consequently there was but little pain. Vomited matter consisted of ingesta and that regurgitated from the duodenum; no stercoraceous matter vomited, and all fecal matter had passed from the bowel soon after the first manifestations of obstruction. Gas had free passage from the entire intestinal tract below the upper two feet of the imprisoned jejunum. Hence the flat condition of the abdomen and empty state of the bowels.

Case V.—Mrs. D., aged sixty-three years, has suffered for years from hemorrhoids, internal and external. Within the last eighteen months noticed a growth in the vagina from the right wall, which at time she came to St. Joseph's Hospital for treatment was protruding from the vaginal ostium. About the time she noticed the growth in the vagina a tumor began to develop in the lower abdomen. The last four months she suffered intense abdominal pains, with exquisite tenderness over the abdomen. This was attended by fever, anorexia, and rapid emaciation. Operation, May 30, 1895. First ligated the piles, then dissected out the vaginal tumor, which was attached high up in the pelvis to the cervix uteri and rectum and the cellular tissue between. Some large venous trunks were opened, and hemorrhage controlled by catch forceps, left *in situ* thirty-six hours.

The abdominal tumor was about six inches in diameter and freely movable; manipulation of the tumor caused pain. On making the usual median incision, a dark, dusky-red tumor presented, surrounded by and adhering to the omentum, which was congested, with large veins running over the surface of the tumor. There were adhesions between the tumor, intestines, and mesentery, but not extensive. The omentum was adherent to the abdominal peritoneum over an area of several inches square. The peritoneal surface in general was congested, of a dark-red color, having lost its smooth, glistening, normal appearance. On searching for the pedicle I could find nothing but a slim white fibrous cord, not thicker than an ordinary wrapping-twine, six inches long, connecting the tumor to the broad ligament at the original site of the ovary. The adherent omentum was carefully tied off in sections, the fibrous string severed, and the opening through the abdomen enlarged enough to deliver the tumor without tapping. This was done in order to avoid septic infection, which I feared from the dark color of the tumor and the difficulties attending leakage around the trocar. This is a representative

case, illustrating what sometimes may occur to ovarian and other tumors of the abdomen with long, slim pedicles, to wit: twisting of the pedicles. The peristaltic action of the bowels, the movement of the abdominal muscles, and of the body generally, all contribute something in the way of revolving the tumor on its pedicle. The twisting soon produces partial strangulation of the veins, obstructing the return of blood; hyperemia of the tumor as a consequence eventuates in plastic exudation. A few more revolutions of the tumor completed the strangulation of the bloodvessels of the pedicle. The exudation of plastic lymph and embryonal cells become organized and adhesions to the surrounding viscera are completed; the vitality of the tumor, though of a very low order, is thus maintained, as a parasite is nourished by the new environments. The patient recovered from the multiple operations, and at this time, four months after, is enjoying good health.

DISCUSSION.

Dr. H. W. Longyear, of Detroit.—Mr. President: Speaking of anomalies in abdominal surgery, I removed this small tumor about four months ago from a woman on whom I had performed an ovariotomy. She had a multilocular ovarian cyst; some of the cysts ruptured and the fluid escaped, and in washing out the abdomen I discovered and pulled out this specimen, which you see. It was attached to the ileum on its free side, opposite the mesenteric attachment. I thought at first it looked like a malignant tumor, so I pulled the intestine over the side of the abdomen, resected it, and put in a Murphy button. The patient has made as perfect a recovery as I have seen after any abdominal section. She had no symptoms excepting colic about six hours after operation. The wound was sewed by buried suture, and there was no trouble from that. I began to give daily laxatives and enemata on the fourteenth day, and the button was passed on the nineteenth day. I have the specimen with the button and the two rings, which are the parts of the intestine which sloughed and came away with the button. The tumor was a carcinoma, as shown by microscopic examination.

Dr. A. H. Ferguson, of Chicago.—I should say the button was too small. That is the only criticism I would offer.

Dr. Longyear.—It is possible that I used too small a button. In some of the cases I have seen operated upon by other surgeons the button was apparently too large, and I am confident the patients died because they could not pass the button. I did not care to make that mistake, and so perhaps may have leaned a little too far the other way. This is the only case in which I have made use of Dr. Murphy's valuable invention.

SHOULD INTRAUTERINE INJECTIONS OF GLYCERIN BE USED FOR THE INDUCTION OF LABOR?

By B. M. HYPES, M.D.,
ST. LOUIS.

It is now three years since Dr. C. Pelzer, of Cologne, first called the attention of the medical profession to the intrauterine injection of glycerin for the induction of labor and stimulation of uterine contractions.

In an article published in the *Centralblatt für Gynäkologie*[1] he gave the history of five cases successfully treated by this method, and recommended it to the profession. As all previous plans of treatment had been more or less objectionable and inefficient, the use of the intrauterine injection of glycerin was, as he has recently expressed it, "hailed with delight by many experienced obstetricians." Clinicians in different parts of the world began to apply his method as suitable subjects presented. In short order reports appeared in the journals giving the statistics of cases treated, and lauding intrauterine injections of glycerin as a "simple, safe, and efficient means for the induction of labor and the stimulating of uterine contractions." Notable among these authors were Dr. J. Clifton Edgar, of New York City, who reported two cases,[2] and Dr. Alexander Russell Simpson, of Edinburgh, who reported six cases,[3] without any failures or serious complications. That the profession was favorably impressed by those reports goes without saying; and the means advised were applied by different physicians in widely separated localities. Fortunately, in this manner, by practical tests, the merits or demerits of new remedies and methods are brought out; and before long the intelligence and judgment of the profession adopt them if of proved value, or discard them entirely if found inefficient and dangerous.

"Pelzer's method" has now been before the profession long enough, and sufficient cases (between thirty and forty) with results have been reported, for an intelligent judgment to be passed as to its value. Before discussing the evidence presented permit me to read the notes of a case coming under my observation.

Through the kindness of Dr. H. Marks, Superintendent of the St. Louis City Hospital, I saw a patient for whom Pelzer's treatment was deemed appropriate. I regret that, in accordance with the importance of the case, a more accurate and elaborate clinical history was not kept. However, I will give it as it has been furnished me, and hope that most of the salient points will be brought out for your consideration.

Mrs. M. W., aged twenty-three years, married, servant, United States. Family history *nil*. Previous history: typhoid fever some years ago and an undefined eruption on the body two years ago, her only illnesses; recovery from both apparently perfect. Eighteen months ago was delivered by forceps of a dead fetus after a labor lasting three days. Recovery good. Last menstruation January 8, 1894. Enjoyed good health until about the middle of September, 1894, when, being then pregnant, she was struck in the abdomen. Felt life for one week after injury, but none since. Has vomited frequently during the past three weeks and suffered more or less pain in stomach and back. Has observed no headache or swelling of the body. Entered hospital October 8th, at 6 P.M., suffering with labor pains, which began at 8 A.M. of the same day.

Present condition. Pulse 88, with occasional intermission; temperature normal; tongue moist and slightly coated; bowels open; bladder evacuated normally; urine light yellow with a specific gravity of 1007, presents a mere trace of albumin but no casts or blood corpuscles.

Physical examination reveals no abnormality of organs. General appearance healthy; no edema. Obstetrical examination indicates pregnancy at eighth month; neck of uterus not obliterated; os uteri closed; vertex presentation; fetal heart-sound doubtful—said to be heard by some of the examining physicians, by others not; no fetal movements observable.

Diagnosis. Pregnancy eighth month, with false labor pains.

Treatment. As patient was in good condition mentally and physically, and as there was doubt about the fetus being dead, she

was put on opiates, hoping that the pains would disappear and that the child, if alive, might be saved. Uremic poisoning being suspected, daily examinations, chemical and microscopical, of urine were made, but revealed no abnormality save a trace of albumin and a somewhat diminished quantity. There was also an entire absence of fever.

On October 11th, the patient showing signs of exhaustion, and the pain returning as soon as the effects of the opiates wore off, upon consultation it was deemed best to induce labor and empty the uterus. Accordingly at 7 P.M., after thorough antisepsis of genitals, instruments, and glycerin, Pelzer's treatment was instituted, two and a half ounces of glycerin (some, possibly two to four teaspoonfuls, was lost in the operation) being injected near the fundus of the uterus through a No. 10 English gum catheter, which was plugged and allowed to remain. Labor-pains, which already existed, soon became stronger and continued all night. Vaginal examination on the morning of the 12th revealed but little progress in the labor; the os uteri was open merely enough to admit one finger, and the fetal head presented low in the womb. The patient having passed no urine through the night, the bladder was catheterized and one ounce of bloody urine drawn; examination of same revealed some albumin and hemoglobin, a few blood corpuscles, but no casts. Pulse rapid and feeble; respiration accelerated; some nausea and vomiting.

At 8 A.M., October 12th, second glycerin injection, two ounces, was given, and catheter left *in situ*. Labor progressed slowly throughout the day, although pains were strong, and patient was delivered of a dead fetus at 6 P.M. by forceps. Instruments were used on account of exhaustion of patient and powerless labor. Position O. L. P. After delivery patient remained very weak and exhausted; was semi-comatose through the night; vomited dark material. Heroic stimulation resorted to—opiates, strychnine, ether, and hypodermic injections of one pint of normal salt solution, with rectal alimentation.

Oct. 13th, morning: Patient was still weak and stupid; vomits often; tongue dry and coated brown; pulse rapid and feeble; temperature 102.6° F.; bowels moved freely by laxative enema; stimulants and nourishment kept up through the day. Evening: Patient weak, but brighter; temperature 100.6° F.

Oct. 14th, morning: Patient much improved; vomits less; takes nourishment and stimulants by mouth; pulse 96; temperature 97.6° F.; respiration 20. Evening: Pulse 100; temperature 97° F.; respiration 24.

Oct. 15th, morning: Rested well through the night; pulse 104; respiration 20; temperature 98.2° F.; bowels acted freely during the day. Evening: Pulse 100; respiration 20; temperature 98° F.; no vomiting today. (No reference being made to urine during 13th, 14th, and 15th, I take it means no abnormality observed.—Author.)

Oct. 16th: Patient not so well today; vomits dark-colored matter; has occasional twitching of muscles; is delirious at times; skin itches intensely; urine scanty and high-colored, contains 1 per cent. albumin, epithelium, and a few blood corpuscles. Diuretic cathartic given.

Oct. 17th: Patient much worse; in semi-comatose condition; has almost total suppression of urine; pulse rapid, weak, and compressible; breathes in gasps, and breath has urinous odor; no vomiting; treatment continued.

Oct. 18th: Patient has continually grown worse; pulse weaker; urine entirely suppressed; during afternoon about one quart normal salt solution given hypodermatically; some improvement in pulse followed; hot pack applied. Patient died in the evening.

Autopsy seventeen hours after death; rigor mortis poorly developed. Lung very dark colored and contained large amount of venous blood. Heart normal; no valvular lesion; no pericardial exudate. Liver showed increase of fat; otherwise normal. Spleen swollen and soft. Kidneys swollen, congested, non-adherent capsule; fatty change in cortical substance. Uterus enlarged, but contained no membranes or placenta. Peritoneum normal; many ecchymoses on serous membranes. Cause of death, acute nephritis.

Here we have the case of a healthy, strong, and robust woman, working as a servant up to the very day she entered the hospital, with no flaw in her history save the injury received three weeks prior to labor, dying of an acute nephritis following the intrauterine injection of glycerin. The clinical history is so at variance with that of those dying from shock, entrance of air into the veins and circulation, or from metritis—the usual fatal results of vaginal and uterine douches—that I cannot for a moment believe that death

resulted from any of these causes. The only reasonable conclusion to my mind is that the *method* is at fault.

Up to this time, unfortunately, I had only learned of the favorable results of Pelzer's treatment. Further investigation into the literature of the subject revealed that others had also met with disagreeable effects—none of them so serious as in this case, but all of them of such a character as either to make the operator more conservative in his use of the method or to cause him to abandon it altogether.

Dr. F. Pfannenstiel[4] seems to have been the first to write upon the dangers of these injections, reporting two cases that came under his observation in the Breslau Gynecological Clinic, in both of which he observed the most positive signs of the poisonous effects of glycerin upon the blood and of irritation of the kidneys. His first case was one of pregnancy with nephritis, in which the patient suffered so seriously from edema and functional disturbance of the heart and lungs as to render an immediate emptying of the uterus necessary. Pelzer's method was used, but the woman died eight hours after the injection, without labor pains being induced. This case should not weigh against the treatment, as the patient was probably hopeless. However, at the post-mortem examination it was observed that the kidneys and bladder were irritated by the glycerin and that the bladder contained bloody urine.

In his second case—pregnancy with contracted pelvis, normal urine, and health good—the injection of 100 c.c. of concentrated glycerin produced immediately severe labor pains, followed in one hour by obtunded sensibility, cyanosis, fever, 102° F., and slowing of the pulse. Urine drawn off one hour after the injection was of a blood-red color. This persisted for twenty-four hours. Examination of urine revealed large quantities of albumin, some hyaline casts, no red blood-corpuscles. Spectrum analysis showed methemoglobin and hemoglobin. Premature labor was induced by colpeurynter. Child born alive. Puerperium without complications.

About the same time Dr. Mueller[5] reported, from von Winckel's clinic, the case of a pregnant woman with a contracted pelvis and a very large goitre, where he injected 100 c.c. of glycerin into the womb to induce premature labor. Ten minutes after the injection there was vomiting, the bowels acted, and a rigor of one hour's duration occurred, with severe dyspnea. The temperature mounted

to 104.9° F., and the pulse to 156. Both dropped on the second day. During labor and for a few days afterward the urine was of a dark reddish-brown color, produced by the presence of methemoglobin and hematoporphyrin. Mueller adds that the method acted quickly, but the reaction was so trying that it appears clearly indicated that less glycerin should be used.

In our own country I find a very interesting case reported by Dr. Oscar Embden,[6] of Brooklyn, N. Y., where, in a pregnant woman suffering with nephritis and threatened eclampsia, he injected 90 c.c. of sterilized glycerin into the uterus to produce premature labor. Slight uterine contractions followed for three hours, when they ceased. Pulse-rate lower, from 78 to 50 per minute. Temperature normal. Six and one-half hours after the injection the woman, being attacked with eclampsia, was delivered of a living child by manual dilatation. Following the use of the glycerin a large quantity of hemoglobin appeared in the urine, gradually disappearing twenty-four hours after delivery. The second day after confinement a severe icterus set in and the patient fell into a comatose condition which continued for six days. Subsequent recovery gradual.

Here are five cases, including the one reported in this paper, all presenting evil effects of intrauterine injections of glycerin for the induction of labor. While different organs—kidneys, liver, stomach, bowels, brain, nervous system—seem to have been occasionally affected, the kidneys suffered invariably. These symptoms can all be accounted for by the poisonous effect of glycerin upon the blood, decomposing, as it does, the red blood-corpuscles. Pfannenstiel, as quoted by Embden, says that glycerin is liable to occasion decomposition of the blood, as Lichsinger,[7] Schwan,[8] Filehne,[9] Lebedeff,[10] and Wiener[11] have demonstrated ; and Afanassiew[12] has shown, experimenting with dogs and rabbits, that the hemoglobinuria caused by glycerin brings on a glomerulo-nephritis, which is followed after the injection of more glycerin by interstitial nephritis as well as interstital hepatitis, each case presenting the bloody urine with its constant constituents.

Pfannenstiel finds an explanation of the absence of accidents in Pelzer's cases in the fact that Schwan, Lebedeff, and Filehne have shown that in rabbits, when the glycerin is brought under the skin, hemoglobinuria always occurred, but that it did not occur, or

in a slight degree only, when it was injected directly into the veins. Without giving an explanation of this remarkable fact, Pfannenstiel deems it possible that in Pelzer's cases the glycerin was rapidly absorbed by the circulatory system, while in his case it acted in the decidua uteri as if it had been injected by the hypodermatic method.

Whatever may be the explanation of the various effects of glycerin injections in the hands of different operators, the identity of the poisonous symptoms in the five unfavorable cases presented in this paper is incontrovertible. Should, however, any further confirmatory evidence of the poisonous effects of glycerin be deemed necessary, beyond the experiments upon animals already quoted, we have it furnished by the surgeons who, a short time ago, were injecting iodoform-glycerin into various cavities of the body, but who now have abandoned the practice on account of the poisonous effects produced. Mikulicz, quoted by Pfannenstiel, says glycerin can induce poisoning when injected into absorbing tissues or cavities, and he has observed hemoglobinuria accompanied by methemoglobin appear in several cases in twelve to twenty-four hours after such injections, disappearing in twenty-four to forty-eight hours without reappearing. In one case, after curetting two periarticular abscesses of the hip in a four-year-old boy, sixty grammes of iodoform-glycerin were injected, followed by severe hemoglobinuria and death in four days. The autopsy revealed acute parenchymatous nephritis, edema of the lungs, and fatty degeneration of the liver. This, as you will observe, is almost the identical condition found in the autopsy reported by me in this paper. Since that sad experience, Mikulicz is said no longer to inject iodoform-glycerin into absorbing cavities.

That glycerin used in this manner is poisonous and deleterious admits of no doubt. Clinical observations by obstetricians and surgeons, and experiments upon animals, justify this conclusion. The method, then, should be abandoned and relegated to the past with those of Kiwisch, Schweighaüaser, Cohen, James, and others. No degree of efficiency can justify the employment of means fraught with such terrible danger.

But glycerin injections do not possess even the merit of certainty, as many operators after using them have resorted to other means to effect delivery.

Pelzer even seems to be losing some of his enthusiasm. In a recent article[13] he admits that his method has not come up to expectations in all cases, and adds that he would like to see its application limited, both in selecting the cases and in the amount of glycerin used. Further on in the same article he says that the method should not be applied to women suffering with eclampsia or placenta previa. I would like to add that it should not be employed at all, but least of all in cases with kidney complications. In the light of experience it is inapplicable in constitutional or organic diseases of pregnant women; and, certainly, more effective and less dangerous means can be resorted to in pelvic contractions where an elective operation is permissible. But in objecting to any plan of treatment we may expect to be asked, What can you recommend that is better? We answer cheerfully that we think several methods are preferable, but the one *par excellence* to be selected is the elective accouchement, or the "accouchement forcé," as it is frequently termed. But I will not take up your time discussing this method, as it has been recently so ably placed before the profession in a paper by Dr. L. M. Michaelis.[14] This treatment alone takes into consideration the welfare of the child as well as that of the mother, and is incomparable in its results as a life-saving measure for both.

Glycerin injections sometimes produce very violent uterine contractions, and hence must be followed by a great fetal mortality. In fact, Pelzer himself says that large doses, such as 100 c.c., are apt to destroy the life of the child in this manner, and that he believes such a result happened in one of his cases. In examining the thirty-three cases reported I find that thirteen children were born dead or survived but a few minutes, which certainly is a large mortality for an ideal operation.

To sum up the argument: Intrauterine injections are often inefficient, especially so in doses under 50 c.c. They are liable to be followed by all the ill effects—shock, air embolism, thrombosis, metritis, and sepsis—of other intrauterine douches which have been used and abandoned during the present century. They may and sometimes do produce glycerin-poisoning, *i. e.*, decomposition of the blood corpuscles, resulting in diseases of various organs, but more especially in nephritis with hemoglobinuria.

The method takes no consideration of the life of the child, and hence results in great fetal mortality.

Its use should be abandoned or the dosage reduced, especially in subjects with prior existing kidney affections.

References.

1. Centralblatt für Gynäkologie, p. 220, vol. xlii. No. 2.
2. New York Medical Record, November 26, 1892.
3. Edinburgh Medical Journal, April, 1893.
4. Centralblatt für Gynäkologie, 1894, No. 4.
5. Münchener medicinische Wochenschrift, 1894, xli. 4.
6. Medical Record, July 28, 1894, p. 105.
7. Pflueger's Archiv, 1895, p. 505.
8. Eckhard: Beiträge zur Anatomie und Physiologie, 1874, vol. vii. p. 167.
9. Virchow's Archiv, vol. cxviii. p. 413.
10. Ibid., 1893, vol. xci. p. 303.
11. Archiv für Gynäkologie, 1894, vol. xxii.
12. Verhandlungen des Kongresses für innere Medicine, 1883, p. 216.
13. Centralblatt für Gynäkologie, 1894, p. 345.
14. Medical Record, February 23, 1895.

HAS GYNECOLOGY RECEIVED JUST RECOGNITION AS A SPECIALTY?

By MILO BUEL WARD, M.D.,
TOPEKA.

The members of the profession are gradually awakening to a proper appreciation of the importance and necessity of dividing into various branches the practice of medicine and surgery. The laity are perhaps more prompt in recognizing the advantage of employing the specialist who is really confining his practice to a limited field, rather than the physician and surgeon who treats every conceivable form of disease. All are agreed, therefore, that the specialist has an established and enduring field.

The purpose of this paper is to call attention to the earnest efforts on the part of the Fellows of this Society and other members of the profession necessary to raise gynecology to the rank of other specialties, and at the same time to discuss the best means at our command of educating the profession and laity to the all-important truth that, to be a gynecologist in the modern sense of the term, one cannot at the same time be a general practitioner.

Every physician thinks he is a gynecologist as soon as his experience extends to a working knowledge of the manner of introducing a vaginal speculum and of locating through this instrument the os uteri. Progressive physicians, however, are discarding the constant use of the speculum, as it has been found to be a blind guide when compared with the bimanual method of examining the female pelvic organs. At the same time there is a vast army of practitioners who cannot keep pace with the procession and are still resorting to the speculum and uterine sound as their only method of examining these organs. There seems no way to rid suffering woman of these unscientific and unsatisfactory practitioners until a new generation of properly educated and thoroughly trained physicians shall take their places.

Every member of the profession practices gynecology more or less, save a few who are engaged in other specialties. It will never be possible or desirable to refer to specialists every patient who complains of suffering in obscure organs. The principal thought to be kept constantly before the profession and laity is the necessity of the presence in every community of one or more physicians who have been thoroughly grounded in the knowledge of diseases and treatment of organs that do not admit of visual examination. The possession of such knowledge will demand so much more time and the expenditure of such large sums of money that the possessor should certainly receive the hearty support of those who have not so prepared themselves.

As specialists our duty is to spread the gospel of truth regarding the proper methods of examination and treatment of the numerous diseases peculiar to the female sex, in order that every physician shall have a reasonably intelligent understanding of the methods of dealing with the simpler forms. The universal diffusal of such knowledge will not in the least interfere with the field of usefulness of the gynecologist; on the contrary, the more intelligent the physician in charge of the patient the more promptly is the specialist called in consultation in every case where relief is not promptly afforded as the result of the treatment employed.

Physicians will continue to treat for months and years patients suffering from some obscure disease, but will hasten to an ophthalmologist with every patient who has diseased eyes, if the treatment prescribed does not give prompt relief. Thus we are led to believe that ophthalmologists are the only specialists in our profession who have established the importance of their specialty over the entire world. Gynecology as a specialty will not reach the beginning of the millennium in the treatment of diseases of women until it shall command the recognition and support that ophthalmology and laryngology are now receiving. One of the principal reasons why gynecology as a specialty is slighted is the tendency to grasp everything in sight, and to refuse to refer to other members of the profession all cases not coming strictly under one's own specialty. The natural explanation of this apparent greed is the fact that most physicians, especially those in rural districts, need every dollar that they can honestly make, and it severely tests one's pluck to refuse to step outside of the prescribed lines

when one's friends desire his services. This sacrifice, however, must be made by those who are practising any specialty, if they desire to receive the support of the profession and patronage of those desiring the services of the skilled specialist.

It is not within the scope of this paper to define just what shall be included in the term gynecological practice. It seems the universal custom to unite abdominal surgery and gynecology as one legitimate field. It might be truthfully said that general surgery is so closely allied to abdominal surgery, and that in turn to gynecological surgery, that many so-called specialists are really general surgeons. The same tempter, the almighty dollar, is probably the motive governing such a combination.

The line must be drawn, and when once fixed strictly followed, before we can expect to command and receive just recognition as gynecological specialists. This advice most naturally means, if strictly adhered to, a great financial sacrifice on the part of those who have been combining the entire field of surgery with gynecology. Such a sacrifice, however, will be as bread cast upon the waters to return after many days. It may even temporarily almost take the bread from the mouths of our children; but, nevertheless, it is the only course to pursue if gynecology is ever to be recognized as a specialty whose disciples shall receive the encomiums to which they are justly entitled.

KRAUROSIS VULVÆ: A CONTRIBUTION TO ITS PATHOLOGY AND THERAPEUTICS.

By H. W. LONGYEAR, M.D.,
DETROIT.

The pathological condition known under the name of kraurosis vulvæ is one whose etiology has not been discovered, whose pathology is but imperfectly understood, and whose therapeutics, in consequence of this ignorance, is still experimental and of doubtful value. The disease as a scientific entity has not yet been accorded a permanent position in the medical literature of the day, as but few of the text-books make any mention of it; information on the subject being almost entirely in the shape of articles which have appeared from time to time in the periodicals.

One would judge from this that the affection is a rare one, and, comparatively speaking, it probably is; but I believe its occurrence is much more frequent than this fact would indicate, and that many observers when treating the affection have failed to note the true nature of the disease, treating it often without proper examination—which is a too common fault with the busy general practitioner—and diagnosticating and treating these cases for other affections, such as vaginismus, pruritus, vaginitis, etc.

The appellation of "kraurosis vulvæ" (meaning *shrinking of the vulva*) was given it by Breisky, of Prague, in 1885, who then reported a number of cases; but the disease was recognized, at least as regards some of its peculiar pathological characteristics, some time before this date, as it was described by Dr. Robert F. Weir, of New York, in 1875, as an ichthyosis of the vulva, and also by Mr. Lawson Tait, who described it in 1877 under the name of "serpiginous vascular degeneration of the nymphæ" and writes of it in his recent work on diseases of women. A scholarly paper, and very exhaustive *résumé* of the subject, was read by Dr.

C. A. L. Reed at the last meeting of the American Association of Obstetricians and Gynecologists, in which he gives us still another name for the disease, calling it "progressive cutaneous atrophy of the vulva." These names all have the disadvantage of attempting and yet not describing the full pathology of the affection. The latter appellation would indicate that the disease is situated only in the cutaneous portion of the vulva, while, according to my own observation, a degenerative process in the cellular tissue underlying the cuticle, and evidently preceding and leading up to the surface manifestation, and which, in my opinion, is of greater pathological importance than the later affection of the skin. The name "ichthyosis of the vulva" simply describes the appearance of the disease at the stage in which the cuticle is cracked and abraded. Tait's term of "serpiginous vascular degeneration" refers, like the others, to one part only of the general process, in which a sort of strangulation of the blood-supply occurs. I use Breisky's name because it is short and expressive only of the general appearance of the diseased parts, without attempting to describe what is evidently a complicated pathological condition.

In regard to the etiology of the disease a number of opinions have been expressed by observers from time to time, but clinical evidence has not substantiated them, so that it still remains an open question, a field for original research. From the evidence of clinical observations, which have been confined, however, to but three cases, I am very strongly inclined to the opinion that the cause does not lie in any local or constitutional affection outside of the nervous system, and that the morbid process is due to some defective nerve action, probably of a reflex origin. All of the cases seen by me have been in women who have passed their fortieth year, and in each case the symptoms of the disease were manifested coincidently with those experienced by the patient due to the menopause. In the first case in which I recognized the disease the woman was still menstruating, although irregularly, and the symptoms of the kraurosis had troubled her for about a year, the local appearance of the disease indicating that it was in an early stage of development. In my second case the symptoms of the disease had been manifest for six or seven years, the patient's ovaries had been removed two years before I saw her and before the menstrual function had entirely ceased, and the kraurosis was found to be in the

advanced stage of atrophy. In the third case, the history of which I will shortly narrate, the symptoms of the disease began with the cessation of the menstrual function, and when examined by me four years later the kraurosis had attained what might be called, for comparison, the middle stage. In all three cases constant backache, with no evident cause, was present, and in the last two this symptom was not only marked, but required constant treatment for its alleviation. In my second case, in which the disease had progressed for six or seven years, the symptoms of spinal irritation had been so severe at one time as to require the application of the actual cautery. These facts, in the opinion of the author, all point toward a central nerve lesion as a probable etiological factor in the disease.

The clinical features of the disease are characteristic, and once recognized will never be mistaken for any other pathological condition. On inspection the hair around the vulva will be found to be thin and dry, and late in the disease almost entirely absent; the vulva will appear small and infantile, the labia minora small and shrunken, and late in the disease smoothed off to almost an even surface with the labia majora ; the color of the integument will be pale and bloodless and devoid of pigmentation, while the muco-cutaneous surface will be studded with a number of irregularly-shaped, reddish-brown spots, which on close inspection will be seen to be slightly depressed below the surface on which they lie ; the parts are usually dry, and sometimes the mucous surface is cracked and abraded, and occasionally a slight, brown, purulent discharge is seen. On separating the lips of the vulva the brown spots are seen to terminate abruptly with the margin of the introitus vaginæ, being confined entirely to the vestibule. These spots disappear later in the disease, when the surface of the mucous membrane becomes white and skin-like in appearance. On attempting to retract the perineum it will be found impossible to do so; and not only will the natural elasticity of the parts be wanting, but that portion of the canal outside of the vaginal inlet will feel as if held tightly together by a strong band situated beneath the cutaneous surface—like a puckering-string around the mouth of a bag. While the brown spots are present the sensitiveness of the parts on which they are situated will be very marked, the slightest touch causing pain. This, coupled with the tenseness of the

vulvar orifice, renders the act of coition always painful and often impossible.

In referring to the pathology of the disease those who have written on the subject speak of it as being a disease in which the cutaneous structure alone is affected. Tait says: "It is, in fact, a progressive atrophy of the mucous membrane, the last textures affected being the bloodvessels and veins; for, when the process has been completed, the pain ceases, the redness disappears, and nothing remains but a vestibulum vaginæ, so narrow that incredulity may be excused when the patient states that she has borne children." Breisky says: "The skin and mucous membrane in the region of the labia majora and minora, of the perineum, and of the entrance shrink up, grow dry, and acquire a whitish appearance and are covered with a thick layer of epidermis. The number of sebaceous glands is diminished, the papillary body becomes cicatricial, the connective tissue sclerotic. Thereby the skin becomes tightly stretched, so that it tears extremely easy, hence even the pressure of the finger in examining makes deep rents."

I wish to add to the pathological points of the disease the fact of the presence of the previously-mentioned band of fibrous tissue, which is entirely separate from the skin and mucous membrane, and has been found in the place of, and as an evident result of the degeneration of, the subcutaneous and submucous cellular tissue. I believe that the pathological changes that take place to constitute this disease begin with this fibrous tissue formation, and that the changes following in the skin and mucous membrane are to a considerable extent a result of this constantly increasing condition of fibrous degeneration underlying these structures. This new formation, by replacing the loose cellular tissue through which the nutrient vessels of the skin and mucous membrane pass, acting by gradual and continual contraction, as is peculiar to the elements of fibrous tissue, results not only in the firm and unyielding constriction of the vulva, but, in my opinion, also in the strangulation of the bloodvessels which pass to and from the overlying skin and mucous membrane. This action would account for the spots of ecchymosis observed in these structures in the earlier stages of the disease, and the condition of atrophy of the later stage in which the active functional life is entirely obliterated. The presence of this new formation of fibrous tissue is of interest from a surgical

standpoint, as it is evident that this band of constriction must be removed by any operation that is made for the relief of the stenosis of the vulva. The removal of the degenerated mucous membrane containing the brown spots, as is usually recommended, will relieve the symptom of acute sensitiveness of the parts, but will have no effect on the stenosis. Patients who are said to recover spontaneously from the disease recover only so far as the sensitiveness of the parts is concerned, as the constriction of the vulva, due to this band of fibrous tissue, will exist as a permanent condition.

The case on which these notes on pathology were demonstrated was one occurring in my clinic at Harper Hospital and on which I performed an operation, the method of which as applied to this disease, so far as I am aware, is original with me. The operation is made in a manner analogous to Whitehead's operation for hemorrhoids, all of the diseased mucous membrane containing the spots being removed *en masse*, and healthy mucous membrane from above the vaginal inlet dissected loose from its basic attachments and slipped down and sewed to the skin in its place. As a result of the experience with my case I should also recommend the entire removal of this fibrous tissue which will be found underlying the diseased mucous membrane.

The history of the case is as follows: Mrs. S., in appearance thin, poorly nourished, anemic; age fifty-four years, married ten years, never pregnant; began menstruating at sixteen and continued regular and normal until, after some irregularity, it ceased four years ago. With the cessation of the menstrual function she began to experience the symptoms which have been steadily increasing in intensity since then, and which at last brought her to my outdoor clinic for relief. She complained especially of a constant pain in the lumbar region and across the hips and at the top of the head. The pain in the hips often caused her to walk lame, and she called it rheumatism, and it was more especially for this trouble that she sought relief. No point of swelling or tenderness at the seat of pain could be discovered. In addition to these pains she also complained of a constant feeling of soreness of the vulva, and said this had been increasing so much that intercourse had become impossible, and she had in consequence separated from her husband. Had some leucorrhea, which was often of a dull-pink color. Defecation and micturition normal. Inspection

revealed the characteristic signs of kraurosis vulvæ in the active or middle stage, the hair being sparse and dry in appearance, the nymphæ shrunken to about half the normal size and nearly devoid of the usual pigmentation, the vulvar orifice so small as to admit the passage of two fingers with great difficulty, and the tissues around it tense and undilatable, and the reddish-brown spots on the mucous membrane well marked and distributed generally on the surface from the nymphæ to the introitus vaginæ. The surface over which the spots were distributed, which comprised the vestibule, was exquisitely senstitive to touch, much pain evidently resulting from a very careful handling of the parts. The patient was sent to the hospital, and on December 10, 1894, at my college clinic, I performed the operation of complete removal of the mucous membrane of the vestibule in the following manner: An incision with scissors was first made along the lateral and posterior margins of the vulvar orifice, dividing the diseased mucous membrane from the skin; then seizing the margin of mucous membrane with dressing forceps, all of the portion above the incision was dissected loose from the underlying tissues up to the vaginal inlet and cut away. The anterior surface was then denuded in the same manner, dissecting carefully around the urethral orifice. After removing all of the diseased mucous membrane in this way, the margin of healthy tissue above was grasped, pulled down, and dissected loose from the underlying parts around the whole circumference of the vagina, for a sufficient distance upward to allow of its being easily brought down to the skin margin, where it was made fast, first with both interrupted and running sutures of catgut, and then with five deep interrupted sutures of silkworm-gut. While dissecting the mucous membrane from the posterior portion of the vestibule the fibrous tissue before mentioned was laid bare, and it was remarked that its surface appeared perfectly white and bloodless. A section of the lower portion was dissected up and cut away; but it seemed so extensive, and not at the time realizing its true import, I decided to leave the upper part of the band and remove it at a subsequent operation, if it should be found necessary to do so. The wound healed immediately, with the exception of a small section on the left side, which was pulled away from the sutures and healed quite tediously by granulation. The result proved entirely successful in relieving the patient of the extreme

sensitiveness of the parts, but the contracted vulvar orifice was only slightly improved, the greatest constriction being within the vulva where the fibrous band had been left intact. The second operation will be performed as soon as the patient can be prevailed upon to re-enter the hospital, but thus far she feels so much better than previous to the operation that it has been impossible to induce her to do so. The pain in the back, hips, and head is very much better, but not entirely gone.

Whether this improvement is due to the operation or to subsequent medicinal treatment is a question. This treatment consisted in the administration of general tonics and the extract of thyroid. The latter remedy seemed to act beneficially, but could not be pushed to any extent, owing to the fact that the patient refused to persevere in it because it caused a feeling of dizziness, even when used in doses of one grain three times a day.

The woman joined her husband in a neighboring town about four months ago, promising to return in a few weeks, but thus far she has not put in an appearance.

DISCUSSION.

Dr. Wm. B. Jones, of Rochester (by invitation).—I desire to ask about a case of kraurosis vulvæ in which there was no change of the condition of the hair of the vulva, no spots where the remnants of the hymen would be expected, but the entire ring just there was undermined with a firm fibrous condition. The muco-cutaneous margin on the surface was inflamed; the color was bright red, varying in spots, reminding one much of the nature of the tissue of urethral caruncle. There was a slight amount of leucorrhea, which was irritating. The cervix was exquisitely sensitive. There were no other nervous symptoms except what might be expected. An operation was performed last spring, and was the same as that described by Dr. Longyear.

Dr. W. B. Dorsett, of St. Louis.—I would like to ask whether or not there was any appreciable atrophy in the uterus itself or in the ovaries, and if they could be palpated. The reason I ask the question is this: I have had the opportunity of seeing a case that has been under my care for four or five years, in which the uterine neck was only slightly involved, and the uterus could only be probed with a

fine instrument. I would ask Dr. Longyear whether he has ever noticed that condition in his cases.

Dr. Longyear.—We have a shrunken condition in the last stage of the disease, but not in the first stage. What is the age of the patient?

Dr. Dorsett.—Thirty-eight.

Dr. Longyear.—I know of a case of kraurosis vulvæ in a young woman who had not had the symptoms of any disease previous to it. The records show a small number of cases under forty years of age, but most of them are over. In regard to Dr. Dorsett's question, the cases I have had have exhibited no peculiar appearance of the uterus. The last case, in which I was able to make more extensive observations than in any of the others, the patient was beyond the menopause four years, and the uterus was in a condition which would be natural about that time.

POST-CLIMACTERIC ENDOMETRITIS.

By JOHN CHASE SEXTON, M.D.,
RUSHVILLE.

In August, 1890, there came into my hands Mrs. B., aged sixty-two years, who had been an invalid for many years. Her menstrual life began at fifteen, and she was perfectly healthy as regards this function. She married at twenty-two and bore five children. Her last child was born when she was thirty-eight years old, and since that time she has been an invalid. She ceased to menstruate at forty-eight, but the menopause brought her no cure, although there was no special event marking the climacteric. From the date of her last labor to the end of her menstrual life she had menorrhagia and metrorrhagia. During these years she was a sufferer from certain unknown uterine diseases. Her physicians told her that she had ulceration and displacement. She had been treated by different physicians, but failed to be relieved of her sufferings. Within a year after the cessation of her last menstruation she began to have a discharge from the uterus, at first appearing only at the monthly periods, later on becoming constant. She had during these years two attacks of hemorrhage of very slight amount. When she came into my hands she was in every way a confirmed invalid, utterly bed-ridden. She had lost considerable in flesh and presented evidences of sepsis; she had no appetite, the bowels were irregular, her pulse over 100, and temperature elevated two and one-half degrees. Her statement is that she has had for twelve years a thin, watery discharge from the uterus having an offensive odor. At times the discharge is slightly pink in color; more frequently, however, it presents the characteristics of a thin, watery pus.

The odor is distinctly fetid, and, while worse at one time than another, is always offensive. She is unable to sit up or stand, on account of pain in the back and lower portion of the abdomen.

Upon examination the vagina contained a small quantity of a thin, sanious, muco-purulent liquid of an extremely offensive odor. The uterus is over three inches deep, is retroverted and somewhat fixed in its malposition. There is an old laceration of the cervix. A dull curette brought forth a considerable quantity of pus and blood, and its introduction was attended with considerable pain. After a few days she was placed under an anesthetic and the entire cavity of the uterus thoroughly curetted with a sharp instrument, after previous dilatation with a steel dilator. The cavity was wiped out with carbolic acid, then irrigated, and the vagina tamponed with iodoform gauze. Every precaution was observed in order to do as aseptic an operation as possible. The tissue removed by the scraping revealed pus, blood, and connective-tissue detritus; no sign of decidua or evidence of intrauterine growth. The specimens were submitted to a competent microscopist, who reported absence of the normal epithelium lining the uterine cavity and proliferation of irregular squamous epithelial cells heaped upon each other, which show a granular degeneration going on in them. Occasionally could be found a fibrous stroma enclosing numbers of these cells, and at intervals portions of muscular fibres from the uterine wall. He submitted an opinion that these scrapings presented to him an appearance as if from a chronic inflammation of the endometrium of long standing.

I submit another case, of a lady sixty-seven years of age, whose early history I have been unable to learn, who came under the hands of a medical friend in 1892 for a foul-smelling vaginal discharge. He found upon examination that the discharge arose from wearing a pessary of soft rubber that had become almost encysted within the vagina. Upon its removal and careful cleansing of the parts the patient made a prompt recovery, to return to him one year later to complain that the discharge had again returned. Upon examination he found a thin, purulent, foul-smelling discharge coming from the uterus, which was retroverted and as large as a uterus should be during menstrual life. Under careful treatment, which consisted of uterine washings and topical applications, this patient recovered. Both these patients are now alive and well, one five and the other three years from date of treatment. Neither presents any evidence of recurrence, and both are well so far as this condition is concerned.

There have been reported a few cases of endometritis that have presented themselves in from one to fifteen years after the menopause. The characteristic feature of all these cases has been a fetid, watery, semi-purulent discharge. It has received the name of "fetid endometritis of old women." Dr. Skene has described the condition in the *American Journal of Obstetrics* under the title of "Senile Endometritis." "Post-climacteric endometritis" has also been suggested as a name which more exactly designates the condition. While the discharge from these patients has a very foul odor, it is not always fetid, hence "fetid endometritis of old women" does not appear applicable to all cases. Again, "senile endometritis" does not appear to be a well-chosen term, for many if not most of them appear soon after the menopause, and the atrophy incident to senility is absent in almost all the cases. "Post-climacteric endometritis" has seemed to me to be the term that more fitly describes the condition than any other. This topic is one that is not presented in any of the text-books at my command, and I think the disease is different from the so-called atrophic endometritis that has been described. To my knowledge this subject has never been presented to this Association, and this, with the evident rarity of the condition and scanty literature, is my apology for presenting it for your consideration. The principal point to be observed in this disease is that we have an inflammation, hence truly endometritis, which is not due to degeneration of benign growth after the menopause—although such cases do occur —as well as reawakening of old infectious processes by injury or exposure. It also appears that these cases have features which clearly distinguish them from malignant disease, such as adenosarcoma, epithelioma, or carcinoma.

The two cases that have come under my observation have presented symptoms that recall very strikingly those of cancer of the uterus—to wit, vaginal irritation, protracted or constant flow of watery pus, emaciation, and cachectic appearance of the skin—but the length of time that persists of necessity excludes malignancy. From the knowledge that I can gain upon the subject the symptoms seem to be the following, and are undoubtedly those of an inflammation: Most striking of all is the discharge—a watery, semi-purulent fluid which barely stains linen, which is different from the ordinary leucorrhea, which is quite profuse at times, and not

infrequently shows considerable admixture of blood. Again, the discharge will become more purulent in character, will irritate the vagina and vulva as well as the surrounding skin. A characteristic odor is present, sometimes even more offensive than that of cancer. Occasionally the discharge becomes grumous, at which time the odor is more offensive ; not infrequently it will cease for an interval of varying length. When it does appear again it is usually with a sudden gush of thin, sanious pus. Abdominal pain accompanies these cases, also pain in the back, progressive emaciation, and invalidism ; furthermore, a slow form of sepsis seems to invade the constitution, and the skin takes on a sallow appearance. These are the features presented by almost all the cases.

Dr. Maurange, of Paris, has published three observations of the disease and describes the odor as horribly fetid. In one of his cases he said the features were drawn and the complexion yellowish. Upon local examination, in addition to the above detailed symptoms, the uterus is found to be enlarged—that is, natural atrophy has not taken place ; it remains at its normal size or slightly above it. Maurange's cases present the uterine cavity from seven to eight centimetres ; in my own case the uterine cavity was three and one-half inches deep. Introduction of the sound is very painful, and upon its removal pus or blood follows. Microscopic study of the tissue removed by the curette enables us to distinguish between this disease and cancer, and also at the same time to establish undoubted evidence of a chronic inflammation of the endometrium. The lesions discovered are certainly those of chronic inflammation —infiltrations of leucocytes, reduplication of cells, areola hyperplasia, granular degeneration. The uterine mucous membrane is swollen and easily detached with a curette.

Although these cases appear at a considerable time after the menopause, there seems in all of them to have been an antecedent history of uterine disease. The pathology in my own case was very clear. This patient for many years had had a retroverted uterus. During the menstrual epoch the copious flow of blood to the parts would carry off the detritus and products of inflammation, so that there was little or no retention within the cavity. After the cessation of the menstruation the contents of the uterus, retained by its abnormal posture, would become decomposed and continue an inflammation already established. Furthermore, the

irritation kept up by such an inflammation would cause a certain amount of swelling. While, of course, the blood-supply to the part would be considerably abridged after the menopause, and while the susceptibility to invasions of septic germs would be much less, yet the irritation constantly going on is sufficient to produce considerable swelling of the organ until it would be at least as large as the normal uterus. These patients exhibit evidences of sepsis. There are occasional rigors and not infrequently night sweats, there is almost constantly an exalted temperature, all of which are unquestionably due to the absorption of septic bacteria by the lymphatics of the uterus. The cause of the condition, to my mind, lies in antecedent inflammation, primarily and secondary displacement. The presence of adhesions fixing the uterus in malposition also adds to the gravity of the condition, because in this position the natural drainage of the organ is effectually prevented. I have not yet been able to ascertain from the reports of cases whether this disease has ever been observed in the normally atrophied uterus properly poised. I doubt very much if such could ever be the case, and think that the essential condition must be retrodisplacement and retention. In the matter of diagnosis certain difficulties may present themselves. One of the French cases was on the table, under diagnosis of malignancy, for vaginal hysterectomy, when for some reason temporary curettement was done instead, with resulting perfect cure and disappearance of all the symptoms which had spoken for cancer. Cancerous disease of the body of the uterus is much less frequent than that of the cervix, and, while adenoma is uncommon, the characteristic feature of all those cases is hemorrhage. In "post-climacteric endometritis," however, the discharge is peculiarly free from blood : sometimes there will be evidences of admixture of blood in the discharge, but a hemorrhage is almost entirely wanting as a symptom in these cases. Then, again, fixation : while it appears that a certain amount of fixation is present, yet it is never so decided as in that of advanced malignancy. And last and most important of all is the length of time these cases have continued. It has been presented in argument that the symptoms detailed under the head of "fetid endometritis" are only the beginning or prodromata of cancer, and the condition untreated soon develops malignancy. This does not appear, for the condition of my own case has continued for twelve years, which is certainly too lengthy a period for incipiency of malignant disease.

In addition to the clinical history and the diagnostic points already laid down, we have differentiation that will come from microscopic study of the débris of curettement. While there is infiltration of cells and reduplication and crowding, there is at the same time evidence of fatty degeneration and inflammation, with no attempt at arrangement such as is found in the curetted débris of adenoma or carcinoma. While the microscope alone in many instances will throw little in the scale of evidence that is of value, yet, taken in consideration of the history, I think it is possible for the accomplished microscopist to decide in these cases as to the positive absence of malignant disease. The treatment of the different forms of "post-climacteric endometritis" seems to be rational and absolutely successful. No case has resisted thorough curettement and proper after-treatment. After observing all proper precautions as to preparation of patient and surroundings, a careful dilatation should be made with a steel dilator. The ease with which the dilatation can be made in one of these cases is due to the tenderness and lowered vitality of the organ, hence should be done with great caution for fear of producing laceration. Then the curettement should be done thoroughly, and it is easy because the inflamed surface is easily removed. The condition of the uterine body is such that perforation can easily occur from careless usage. Following this, thorough wiping with dry iodoform gauze, after which a test should be made with peroxide of hydrogen in order to see if there is further sign of pus, after which the organ should be irrigated with a bichloride solution and then wiped as dry as possible with rough gauze. Drainage by strands of silkworm-gut seems to answer the purpose better than gauze packing. The after-treatment consists in daily irrigation of the uterus with peroxide solution and wiping with gauze until the uterus returns to its normal atrophied size. Under this treatment I have presented two cases that have shown no recurrence after five years and three years respectively, and the symptoms of sepsis, pain, and invalidism at once disappear under this method. Vaginal hysterectomy is not needed, although it would furnish a very prompt solution of the question before us. These patients, however, as a rule, are pretty well advanced in years and are broken down from carrying a local depot of pus and septic infection ; consequently a major operation is not desirable if it can be avoided.

IS SO-CALLED CONSERVATISM IN GYNECOLOGY CONDUCIVE OF THE BEST RESULTS TO THE PATIENT?

By E. ARNOLD PRAEGER, M.D.,
LOS ANGELES.

It is the universal custom aboard ship to take and correct the vessel's position daily at a certain hour, and doing this does not in any way interfere with her progress. Let us suppose that on a given ship a party of men whose occupation was navigating, but who were simply passengers on this particular vessel, got together and openly expressed their opinion that the course was wrong, the position incorrect, and that danger was ahead for the numerous lives on board; we can easily imagine that the ship's officers, without perhaps admitting that they paid any attention to unofficial interference, would carefully review their *status in quo*, and, being satisfied that their course was unassailable, would let the ship proceed, knowing full well that they had taken into account all that should be considered to bring the voyage to a successful termination, and that the information at their command was to them more valuable and trustworthy than all the "accumulated vaporings of irresponsible frivolity."

It seems to me that without delaying unduly the progress of this Association—which I will compare to the ship—through the sea of science, and without running the risk of causing any of the more strictly scientific papers with which she is loaded down to be jettisoned, I may make use of the few minutes at my disposal to inquire whether the old and at present somewhat fashionable utterances, that we are running on rocks, or, in other words, that we are displaying recklessness in dealing with the lives committed to our care and over-operating in gynecology, have any foundation in fact, or whether the course we are pursuing is not absolutely correct.

"Over-operating in Gynecology" formed the subject of the address in the department of gynecology and obstetrics at the recent meeting of the British Medical Association in London.

From the stand taken by a number of the medical profession one is almost inclined to ask whether it is of any benefit to the world that there should be gynecologists. Their remarks and assertions, for which they do not produce the least particle of proof, would imply that gynecology is a sort of illegitimate appendage of medicine, which should be choked and strangled out of existence as a monster which has suddenly arisen to unsex and destroy lovely woman, whereas in truth the science which deals with the diseases of women is one of the higher branches of surgery.

I will grant at once that in any case in which any of these gentlemen who are raising this cry are consulted they have a right to express themselves as to the necessity or otherwise for operation, but they have no right to condemn wholesale and generalize without official information, nor must they expect that for all time they will be allowed to do all the talking.

It is surprising that that branch of surgery which has made the greatest strides in the latter part of this century is the one which has had to endure the hardest knocks and the greatest opposition from the exponents of what I venture to submit is miscalled "conservative surgery."

I very much question whether "conservative" should ever have been placed in front of the word "surgery," for, unless it is intended to convey a meaning of contempt for the practice of today, its use is tautological; for the true surgeon has always been as conservative as the state of knowledge in his time has permitted him to be, and has as zealously opposed the sacrifice of the most minute portion of skin or the smallest drop of blood which could be saved, with due regard to the interests of his patient, as did Portia when she laid down the law to Shylock who was about to insist on the enforcement of his bond for one pound of Christian flesh.

Now, we are told that a love of glory, the glamour of a successful operation, even the big fee which these gentlemen who rejoice in the name of "conservatives" seem to imagine accompanies or follows every case, tempts the gynecologist ruthlessly to unsex, wound, and even kill the poor suffering women who fly to them

for succor, after having in all probability spent their all with those who are declaiming against us and our branch of practice.

These men are of the same race who so bitterly opposed the operation for removal of ovarian tumor when first it began to be practised with anything like success—a condition for which they were then, and are now, powerless to suggest any other plan of treatment that did not consign the sufferer to a miserable and certain death.

The principles of surgery somewhat resemble justice : you cannot have one system of justice for a person of a white skin and a totally different system for a person of a darker hue ; in the same way your principles of surgery can hardly insist on early incision of the finger where a felon is suspected, and deny early incision to a collection of pus within, or liable to find its way into, the peritoneum.

If surgical principles are so elastic and make such a glaring discrimination between different parts of the body, then I very much fear that our boasted science is not scientific.

The charge brought against us of seeking to short-cut our way to fame is very wide of the mark, because the moment the people find that a surgeon is what they are pleased to call " fond of the knife," his usefulness is likely to be seriously impaired. I know this to be true, most assuredly, of men located in the smaller communities, and from remarks overheard concerning men doing surgical work in the largest centres I believe it to be equally applicable to them. If there are men in the profession—I do not say there are—who prostitute their opinion for the sake of notoriety or more material gain, is it not at least probable that they are to be found among the ranks of those who continually put themselves on record as opposed to the teachings of the newer pathology, and that some among these are trying to short-circuit fame by adopting what is becoming a fashionable craze (in effect), to preach that it is better for one hundred suffering women to die unrelieved than that one should be relieved at the expense of the organs which are not only useless but a source of danger ?

I have little fault to find with the following sentence, which I quote from the address before alluded to : " Certainly, experience has taught much hitherto unsuspected as to what may be accomplished by skilful procedure and scrupulous antiseptic precautions,

but the enthusiasm aroused may readily be carried too far. I have lived long enough to see the evils of rushing on too impetuously, and in watching the progress of gynecology during long periods of time have witnessed the wax and wane of many enthusiasms which have had their day, and have had a share in bringing something like discredit on a department of practice which, rightly exercised, is productive of great good, but exercised unwisely is capable of producing infinite harm."

I think no one will venture to dispute the truth of that statement, but it has a very much wider application than its author perhaps intended. Any department of medicine rightly exercised is productive of great good, but exercised unwisely is capable of producing infinite harm.

There are many also who, without being able to boast of an extended experience covering half a century, can say truthfully that they "have witnessed the wax and wane of many enthusiasms" in other branches of medicine besides the gynecological—as witness the inflation of the rectum with sulphuretted hydrogen, the injection of tuberculin for tuberculosis, and the much-vaunted coal-tar products, of which it was at one time prophesied by "enthusiasts" that they would revolutionize the treatment of fevers, etc.

Were we anxious to retaliate for the many hard knocks dealt to us as gynecologists, we should not have very hard work to prove that as many have fallen victims to new drugs and new-fashioned theories in medicine without any pathological facts to support them as can be laid to the charge of the surgeon or gynecologist; while if we were to take into account the sins of omission of our ultra-conservative friends and attempt to count those whose lives were sacrificed to prejudice, and might have been saved by more radical treatment in the hands of a surgeon, we should have such a heavy balance in our favor that some of our ultra-conservative critics would in all probability look about for some other material from which to construct their papers for a considerable time to come.

Were it not for the "enthusiasts" medicine and surgery would not have made the rapid strides with which they are rightly credited. That some have allowed themselves to be carried too far is no doubt true, but it is only just and fair to give them credit for the best intentions; they acted in accordance with their lights, and were groping in the dark to discover means for the relief of suffering humanity.

It is right that enthusiasm should encounter mild criticism to keep it within bounds, but when pathology points the way to effect a cure, or as near a cure as our limited knowledge permits it to do, those who in a hasty or obstinate manner refuse to accept its teachings, and neglect no opportunity of expressing their disbelief in the necessity for operation for the relief of dangerous conditions, such as pus-tubes, etc., surely place themselves somewhat in the position of the serpent when he tempted the first woman with the assurance "Ye shall not surely die."

The writer of the address to which I have alluded speaks of "an ardor for stitching up rents in the cervix uteri following childbirth, rents which were described as producing many hitherto evils and frequently conducing to the establishment of malignant disease. One votary of this practice boasted of having detected and operated on, in a short period, no fewer than three or four hundred cases which he found in examining nine hundred women. Surely here was a marked illustration of the "*nimia diligentia.*" I venture to ask whether this is a fair way of putting the case. We all know of a celebrated lithotomist and of the large number of lithotomies with which he is credited; would any dare to suggest that he has been over-operating? The reason he does so much work in this line is, clearly, because he has obtained so much proficiency in his specialty that his light can no longer be hidden under a bushel, and patients flock to him.

This argument might be extended to several others in many branches of practice, against none of which has the charge of over-operating even been hinted; and I ask whether it should not be held in the case of the gynecologist referred to in my quotation, in a similar way, that he is a man possessed of skill and a large clientèle, certainly until the contrary is proved, rather than he should be branded as a man who is operating needlessly, and thus be held up as the type of what constitutes the gynecologist?

Lest some suppose that I am attaching too much importance to the views of one man, I wish to quote from an editorial in the *British Medical Journal* of a week later than that which published the address which so far has formed the subject of my text. After bestowing a few complimentary remarks on the address the article goes on to say: "Unfortunately, several European authorities of high repute continually advocate extreme courses, such as total ex-

tirpation of the uterus with the appendages in cases of chronic, or even acute, inflammatory affections of the tube and ovary. Last June the German Gynecological Association met at Vienna. A leading authority laid down the law that in gonorrheal diseases of the appendages it is absolutely wrong to leave the tube and ovary on one side, even if they seem healthy, and that it is much better to remove the uterus as well. Another authority supported him on the score that many 'parenchymatous bleeding areas' are to be found in the uterus in these cases, so he always removes that organ. He does the same, he adds, in cases of malignant ovarian tumor—a clinical and pathological condition quite different from gonorrheal inflammation. Veit, of Berlin, spoke in a vein of satire. The advocates of amputation of the uterus insist that when the appendages alone are removed, exudations on the two pedicles set up pain and cause adhesions to the intestine or else fix the uterus. Veit attributes the exudations to fresh gonorrheal infection; therefore, says he, 'castration of the husband is the best thing for the patient.' Unfortunately, in France as well as in Germany, hysterectomy is extensively carried out. It is difficult to conceive anything more unsurgical than extirpation of the internal female organs for damage done by gonorrhea."

I think it will be conceded that there is a large proportion of cases in which, in the interest of the patient's future well-being, it is advisable when removing the ovaries and tubes to remove the uterus also.

The modern method of excision of the breast demands the complete removal of the axillary glands, the fascia, and the skin beyond any suspicious line of infection; and is it not probable that in removing the adnexa for malignant disease it is wise also to extirpate the uterus, which would otherwise, at best, be but a useless organ, especially when we consider that its removal adds little if any to the danger of the operation? Is it not easy to understand also that there must be a certain number of cases in which the uterus is found to be so diseased (when the abdomen has in the first instance been opened for the extirpation of diseased appendages) as to make it advisable, in the interest of the patient, to sacrifice that also?

Although a great many contend that it should invariably be removed at the same time as the ovaries and tubes, because without them it is a useless organ, I think it is not in accord with correct

principles to remove an unoffending organ simply because it is useless. Yet, according to the *British Medical Journal,* this course has the advocacy of many authorities of high repute, and therefore it should not receive wholesale condemnation until it is proved beyond the shadow of doubt that gynecological authorities are either less educated or more reckless, or both, than their brethren in other branches.

The sentence, however, that I find hardest to reconcile with pathological fact is that containing the startling statement that "it is difficult to conceive anything more unsurgical than extirpation of the internal female organs for damage done by gonorrhea."

When so flat-footed a statement as this is made it appears to me that we are entitled to ask the writer—whose views must at least coincide with those of the editorial staff, otherwise the article would not have been admitted as a "leader"—whether he knows anything about the damage to the internal female organs caused by gonorrhea, and, if so, what treatment short of ablation is in the majority of cases of the slightest avail?

This is a fair sample of so-called "conservative" literature. Those who have had to deal with internal female organs damaged by gonorrhea know that delay here, in the largest proportion of cases, means death and a harvest for the undertaker.

If the writer is aware of any plan of dealing with this terrible condition which will at the same time preserve to the patient her organs and her life, he should not lose time in publishing the fact, that his *confrères* will no longer be under the necessity of indulging in the unsurgical(?) course which he finds it so hard to understand.

I do not wish to be understood as advocating the needless mutilation of the human or other animal, but when diseased organs threaten life or place the patient in such a position that life becomes a burden, or prevent the performance of the necessary duties, I can imagine no higher privilege than that of the surgeon to remove the offending members and restore his patient to a condition of safety or usefulness.

While in the greatest number of instances the best rule for guidance undoubtedly is that the least sacrifice of parts is an exhibition of the best surgery, in malignant disease, on the other hand, it is better to "cut wide of the mark."

The removal of ovaries and tubes simply for pain, when they do

not present pathological conditions, has for some time been condemned by gynecologists, and there is no more occasion for members of the general body of the profession to keep harping on that string than there is for the gynecologist to keep on reminding the ophthalmic surgeon that the eye is a valuable organ and should not be wantonly condemned simply because it is unsightly or sightless and no source of danger to the other eye. I imagine it would be found, if an exhaustive inquiry were made into the matter, that the neurotic cases, those in which the patient "carries her sexual apparatus on her brain," do not remain in the hands of the gynecologist after it becomes apparent that the sexual organs are not the seat of disease, but are handed over, as they should be, to the neurologist.

Having indulged in this long introduction, let me briefly inquire what so-called conservatism does for the female from an early period of her existence. In the first place, while it raises its voice loudly against operative measures having cure for their object, it appears to take no stock in prevention, and has done nothing to lift the veil of ignorance, mock-modesty, or whatever you choose to call it, which covers the whole subject of the physiology of the sexual apparatus.

It almost necessarily follows that the young, about the time of puberty (if their minds have not already received the "evil communication" which, we are told, "corrupts good manners"), get anything but strictly trustworthy physiological facts about their functions from those who neither in knowledge nor years are fit or capable to impart information which, properly given, would be useful and in a great many instances really preventive.

Does the young expectant mother, as a rule, receive from the medical practitioner the information that would be so useful to her during the time of her pregnancy?

Is it not a fact that too often she is left to obtain information, which may or may not be trustworthy, from more or less ignorant females whose only qualification, as a rule, is that "they have been through the mill?"

How often does it happen, in spite of all that has been written as to the importance of repairing damage to the perineum immediately after the completion of delivery, that any attention is given to that body, on the integrity of which a woman's comfort and future well-being so largely depend?

Or if it is stitched, how much value can be attached to the manner in which it is done in too many cases—for is it not a fact that too often the woman gets up with only a skin perineum, one existing in name only, and anatomically not of the slightest practical value to her.

Then, some few months or weeks after, when she complains of more or less backache, bearing-down pain, pelvic distress, or purulent discharge, how often is she submitted to strictly scientific treatment?

Is it not of such frequency that it may almost be stated as the rule that she is given some supposed tonic and vaginal wash, and that without adequate directions as to use, and assured that as she gets stronger she will lose her symptoms?

And the last state of that woman becoming worse than the first, she eventually does what she should have done long ago, and falls into the hands of a gynecologist, who restores her to society as a useful member. The great reward bestowed on the gynecologist is the charge of having operated needlessly.

While it has not been proved with mathematical accuracy that laceration of the cervix is the cause of cancer, is it not a fact that in the greater number of cases of cancer the cervix is found lacerated, and may not the unhealthy tissue thereby induced be more prone to take on malignant degeneration?

Or, granting, for the sake of argument, that there is no relationship between laceration and cancer, is there any valid reason why an injury of the cervix should not be repaired by suturing in precisely the same manner that the general surgeon would adopt in a wound of the lip, or forearm, or any other part of the body? Why attempt to get primary union in one part of the body and teach that it is wrong in another? What would be thought of the surgeon who took so little pains in approximating the edges of a wound in a woman's face that an ugly scar was the result? Beyond the fact of the annoyance caused by the unsightly scar in this situation, the cicatricial tissue would not in all probability cause or set up any suffering, and yet fault is found with us for trying to prevent a mass of scar tissue in the cervix where it undoubtedly is often productive of a neurosis.

In commencing malignancy of the uterus does not so-called conservatism, in delaying operation or in only removing a small and

insignificant portion of the cervix, condemn the patient to an almost certain recurrence and death?

True conservatism recommends the removal of the whole organ early, with but little risk to life and at the expense of a body whose functions are already lost in consequence of the disease.

So long as we hold fast to surgical principles and apply them to our gynecological patients, I think we can make sure of keeping on the right track, and instead of being put on the defensive we are entitled to ask of all our critics and of all cavillers—and we shall require something more than mere assertions from them—Is so-called conservatism in gynecology conducive of the best results to the patient?

APPENDICITIS:

Suggestions for a More Uniform and Simple Classification to Aid the General Practitioner, with Report of a Few Cases to Illustrate Some of the Points Presented in this Paper.

By A. VANDER VEER, M.D.,
ALBANY.

I think I voice the consensus of opinion of all in noting the evolution and our gradual release from the use of such arbitrary classification as typhlitis, perityphlitis, etc., when by the clear term appendicitis we reach more correctly the true lesion as we now find it to exist in so many cases that present to both the physician and surgeon for a rational medical treatment, a certain number demanding prompt, clean operative interference on the part of the surgeon.

Whatever classification is attempted in appendicitis, we must ever keep in mind the variety in length and location of this anatomical structure, the appendix.

While a rapid consideration of the subject is comforting, still it rests largely with the work of such associations and societies as this to bring about a more concise classification of appendicitis, and if possible to emphasize the symptoms in such a way that our young practitioners, and especially our middle-aged and old practitioners, will be helped to recognize their cases more promptly than in the past.

As I have maintained for many years, the physician, be he the country practitioner or his more fortunate city brother, must work in unison with the surgeon in all cases that give evidence of appendicular trouble. All cannot become infallible diagnosticians in these cases, but an early, prompt consultation aids greatly in making a correct diagnosis and in the saving of life. We are yet seeing too many cases of supposed impacted feces, of pelvic abscesses, of renal

colic, and other like conditions, unnecessary to name, that to the more practised eye and hand tell too clearly the story of trouble with the appendix. I am certain that anyone who attempts an arbitrary classification of this surgical lesion, making all cases bend to fit such a mould, is justly liable to severe criticism.

We have now the term appendicular colic, which may be made use of as a symptom, but in itself can hardly be considered as indicating any one particular condition of the appendix proper—a symptom that is, beyond a doubt, associated with different stages.

The general practitioner looks to us for a concise classification of symptoms and a clear definition as to the stages of appendicitis, particularly in reference to surgical interference. He knows full well, and an intelligent public understands thoroughly, that there are many conditions or lesions associated with the appendix that do not require surgical interference. Both know equally well that there are also a certain class of cases that require a moderately quick or a very prompt interference that the life of the patient may be saved. How can we satisfy each ?

I wish to emphasize in this discussion that the intelligent public, as regards medicine, and especially surgery, has had brought to its attention, by articles lately published in the weekly or monthly papers, more direct information than has ever occurred in the past in the history of these subjects. In a large class of migratory citizens who go to the mountains or seashore, to the isolated places of this great country, we find that they are on the alert and are watching the symptoms of any illness that may present in their family circle, among friends, or even in the boarding-house or hotel where they may be housed for the time being, with more than usual interest. I do not hesitate in asserting that some of these well-read, well-posted laymen are not infrequently a direct aid to the isolated practitioner, who may possibly see in one of their family his first case of true acute appendicitis. Now, to aid this individual practitioner our text-books are far from being as clear as we could wish. There is much that is wanting, and it is only by continuous discussion of this subject in our special societies, in our larger associations, in which the general practitioner comes in direct contact with the specialist or general surgeon who has had an experience in these cases, that we can hope to enlighten and to place the recognition and treatment of appendicitis in its true light.

From a fairly large field of observation I must say that I have seen much comfort and good result from a classification in which we do not attempt too great a distinction as to the actual pathological state of the appendix itself. By far the most dangerous class of cases that we have to deal with are the acute perforative ones. They may receive the name of gangrenous appendicitis, acute ulcerative appendicitis, septic appendicitis, etc. The result is, alas! sadly the same regarding the patient, whatever may be the classification that has been made. The symptoms are much alike in the respective conditions we have had so ably defined by different authors. The train of symptoms is fairly illustrated by one or more cases like the following:

Mr. R., aged twenty-five years; good surroundings in every respect; a student most of his life; an accountant for the past two years and partner in a large factory, responsibility constantly increasing; habits excellent; scarcely ever complained of ill health. While standing at his desk, 10 A.M., Saturday, November 16, 1893, paying his employés, was seized with a sudden, severe pain in the right side of the abdomen, somewhat low down, as he described it, which compelled him to cease work for the time, though within an hour after he walked nearly a mile to his home. When first attacked he vomited some, and a little more later on. He was seen at once by his family physician, Dr. Rice, who was then obliged to give him morphine hypodermically to relieve pain. The doctor, from a careful examination of the case, from the nature of the symptoms, by exclusion, covering the ground thoroughly well, felt sure later in the day and evening that his patient was suffering from perforative appendicitis. He passed a fairly comforable night, but on Sunday morning there was distention in the right inguinal region, with a tendency to extend over the abdomen, his pulse was rapid, and it was evident to the family that the urgency of a consultation and possible operation (insisted upon by the family physician) could not be delayed. A telegram received enabled me to reach the patient and to meet the doctor in consultation at 2 P.M., a little more than twenty-four hours from the time the patient was taken ill. He now presented a very anxious state. Heart's action was very feeble, pulse 140, and over the entire surface of the body the capillary circulation presented a condition of stasis, being decidedly ecchymosed in many places. His respiration was sighing, and there was that sunken condition of the eyes, the

anxious expression of the face, the quick replies to questions asked, and restlessness, moving from one side of the bed to the other; vomiting small quantities, at times of a spinach-like looking fluid; there had been two or three movements of the bowels, the quantity of urine fairly good, but it was evident that his state was a very critical and serious one. It was difficult to have the members of his family understand fully how serious his case was. On direct examination the abdomen was not greatly distended, but there was a board-like sensation imparted to the fingers, and on pressure there was the resistance of the abdominal muscles to be noted in such cases—the effort on the part of Nature to keep conditions within the peritoneal cavity as quiet as possible. There were here, in the general expression of this patient, all the symptoms of septic peritonitis. The futile attempt was made by hypodermatic injections of strychnine, of digitalis, of rectal enemata and whiskey, and other nutritive material, to rouse him, if possible, from his alarming condition; and while at midnight it seemed as though Nature was able to rally somewhat, yet at early dawn, when his condition was fully explained to him, as an intelligent person he acquiesced in the operation, now found absolutely necessary if anything would save his life. And yet the weakness of his pulse, the cyanosed condition of his extremities, which had continued, all gave us but little encouragement.

We found a condition of acute perforation of the appendix, a gangrenous extremity, escape of secretions containing the poisonous bacillus coli communis into the peritoneal cavity, a malignant septic peritonitis present, no feces escaping, no pus at any point, but simply flakes of acute inflammatory peritoneal trouble. The operation was done as rapidly as possible, the right inguinal region and pelvis rapidly sponged, the stump of the appendix ligated and removed, drainage by means of a glass drainage-tube, packing iodoform gauze around it, and patient placed in bed. The appendix was an unusually long one, nearly five inches, lying loose and free in the peritoneal cavity, with a tendency to dip down in the pelvis.

It has been well said there is little encouragement to the surgeon in operating upon a dying patient, and such was the case here. The shock of the anesthetic was not so great, but his powers of resistance were not equal to the demand made, and he died a few hours afterward, less than forty-eight hours from the time that his first symptoms presented. Autopsy showed no fluid within

the peritoneal cavity. There was evidence of general septic peritonitis.

Here is a case, to the Fellows present, unnecessary to review as regards the malignant intoxication of his system through the entrance and rapid multiplication of the bacillus coli communis, the acute destructive breaking up of his blood-supply, the toxic poisoning being overwhelming. It has been asserted by some, and I am yet one of the number, that I scarcely believe a case like this, with so little ability to resist, recovers under any medical or surgical interference; but a precisely similar attack and very much the same train of symptoms may occur in some other person whose system has within it greater powers of resistance, and a happier result follows: phagocytes or leucocytes get their work in so promptly that a degree of resistance is presented to aid the surgeon. Therefore I believe that not one of these cases should be allowed to pass without the effort of a quick, rapid diagnosis and an intelligent, aseptic operation.

To further illustrate: J. McC., aged sixteen years, weight one hundred and thirty pounds, height five feet six inches, who had grown rapidly the past year, had the appearance of development equal to that of a young man of twenty-one, an athlete in many respects, had complained of some disturbance about his bowels during April and June, 1894, but considered it to be an attack of ingestion due to the eating of improper food. At the time in excellent health, September 25th was attacked with sudden pain in bowels, followed by vomiting, with general distress through the abdomen. The pain was controlled by means of anodynes and patient put on malted milk. Bowels responded to small doses of calomel with Hunyadi water, and several small fecal discharges were secured up to October 1st, but temperature ranged from normal to 104°. He then suffered intense pain, followed by great distention of the abdomen, with no movement of the bowels either with the aid of rectal enemata, of laxative diet, or medicines given internally. He vomited more or less continuously, and in this condition I saw him in consultation with Dr. Rice, his family physician, October 5, 1894, when the patient presented a condition of great distention of the abdomen, hiccoughing at times, pulse 120, temperature 102°, hands and feet covered with a disagreeable perspiration, somewhat cold, and that condition present, so often noted in like cases, of great mental distress. When told of his

condition he objected very decidedly to an operation, but was assured that he would die unless one was attempted. Believing the appendix was at fault and that an operation might save him, it was urged, his parents consenting, and done at once. Median incision. A long, loose appendix was found extending down into the cavity of the pelvis, where it had formed an attachment, and in doing so constricted several loops of the small intestine, causing obstruction. The end was perforated, in a gangrenous condition, and the pelvis filed with pus and bloody serum. The diseased portion was rapidly removed. No attempt at flushing the abdomen and cavity or washing out in any way, but thorough sponging was done with a saline solution, a long glass drainage-tube passed down to the bottom of the pelvic cavity and long strips of iodoform gauze passed well down and packed around it. Wound closed by interrupted silkworm-gut sutures. The discharge continued very abundant for several days. The gauze was removed at the end of forty-eight hours and cavity not repacked. Glass drainage-tube was kept in for a little more than twelve days, and then a rubber drainage-tube substituted for a short time afterward. A catheter was used for a short time after the operation. Bowels moved under the influence of rectal enemata. Temperature returned to nearly normal, reaching at one time $100\frac{4}{5}°$, due to sloughing of tissues in the incision. Complete union and closure of the drainage tract did not occur until the end of the forty-third day, when the patient was completely convalescent, bowels moving normally, and digestion going on in a natural manner. In every respect he has made a complete recovery.

Here was a case probably of acute perforative appendicitis, but Nature was able to resist for a time a rapid development of septic peritonitis. All of us have records of similar cases—alas! too many as regards our mortality lists. These are the cases that bear no comparison with the operation for relapsing appendicitis.

In the vast majority of these cases the patient gives but slight evidence of the approach of the terrible illness that is presenting. There is slight pain and discomfort, possibly a tendency to retraction, the drawing-up of the right leg, all occurring within a few hours, almost before the physician is aware of the seriousness of the case. He is suspicious, but does not make a complete and positive diagnosis, when there comes, as it were, an explosion of symptoms in which the patient complains of great pain. The latter is

overcome by anodynes, possibly; but at the same time the patient passes into a condition of collapse from which he does not recover, and dies within a short period from the onset of the symptoms. The autopsy reveals a perforated appendix. There may be more or less clear yellow, dark, or bloody serum in the cavity of the pelvis or between the coils of the small intestine, but no pus is to be discovered. In some cases a fecal concretion or possibly a foreign substance is found just passing out from the ulcerated appendix, perhaps has escaped and is lying loose in the peritoneal cavity. Nature has had no time to form adhesions to surround the appendix, to protect the peritoneal cavity, and therefore these become the most serious and dangerous cases we have to deal with —so little time is afforded, so little opportunity given for the recognition of the dangerous condition that is present; but to those of us who are coming constantly in contact, necessarily, with the profession at large, it is a comfort to know that the general practitioner is becoming more and more alert in reference to this classification of appendicitis.

Another variety of these cases is the acute perforative form associated with acute suppuration. To illustrate:

Miss M. N., aged nineteen years, presenting an excellent history of health, had been eating freely of grapes the week previous to her being taken ill—a statement very quickly made by herself and mother when the possibility of trouble about the appendix was suggested. During the day of September 15, 1894—Friday—she had exposed herself somewhat by sitting upon the cold ground while visiting the cemetery. In the evening she was seized with a severe pain in the epigastric region; was given a Seidlitz power by her mother, but soon vomited. She was seen on Saturday morning by her physician, Dr. Steenbergh, who gave her small doses of calomel, and to relieve pain, which was very marked and spasmodic at times—appendicular colic, so-called—a hypodermatic injection of morphine. She had two or three movements of the bowels, and was easier Sunday evening, the 17th, when I saw her with her physician. She complained now of pain located almost entirely in the right inguinal region, increased on deep pressure, particularly when making use of the McBurney method in locating his point of tenderness. I had but to confirm the doctor's opinion of appendicitis. Her temperature was 101° and pulse above 100. There

could also be made out in this case a distinct phlegmon, a swelling, the much-looked-for tumor by some. I saw her early the morning of the 18th with the doctor; temperature 102°; pulse 120. There could be no doubt now as to a condition of acute suppurative appendicitis. There was the anxious expression of the face, the board-like sensation over the surface of the bowel, with beginning distention. She was removed to the hospital, and I operated at once. There was much effusion of serum in and about the location of the appendix and extending into the cavity of the pelvis, the serum presenting a distinct yellowish-looking appearance, so indicative in such cases of approaching suppuration; lymph exudate thrown out, holding coils of the small intestine, and at the junction of the appendix with the cecum a collection of pus an ounce or more in quantity. Appendix was found in a gangrenous condition; removed in the usual manner; was perforated and contained several grape-seeds, something that in reality we seldom meet with. In this case the peritoneal cavity and pelvis were thoroughly washed out with saline solution containing alcohol. A long glass drainage-tube was introduced into the cavity of the pelvis, and the immediate neighborhood of the stump of the appendix and cecum packed with iodoform gauze, which was changed on the third day, temperature at that time showing a slight rise. Packing was renewed, drainage-tube left in for a week, the patient making an uninterrupted recovery. In this patient the power of resistance undoubtedly aided in her recovery.

A second somewhat similar case: H. T., almost precisely the same history, seeing him on the sixth day with his family physician. Operation. Two large fecal concretions in the appendix, looking almost like kernels of peanuts. Perforative, sloughing condition of the appendix; adhesions throughout the small intestine; pockets of pus in every direction. Removal of appendix; thorough washing out, thorough drainage, but death at the end of forty-eight hours.

Had this patient been seen on the second or third day by the consulting surgeon, who doubts that he would have recovered from the operation? The family physician in this case, a most lovely man in every respect, perhaps sixty years of age, said very frankly to me "he did not believe any case of appendicitis ever recovered from an operation."

It is just such well-meaning general practitioners that we need to impress more with the importance of a better classification of their cases, of a prompt recognition of acute symptoms, and an early calling-in of the surgeon in whom they have confidence.

I might present many such cases as the last two, a fair number of them recovering, but all *belong to a class requiring an early, prompt operation.*

In the immediate treatment of the cavity of the pelvis in these cases I am inclined to think that a thorough mopping-out with the sponge or sterilized gauze is quite as well as, better than, too extensive washing. Dr. McBurney has given us a good paper on this subject.

Another form of appendicitis is the catarrhal relapsing variety, which gives in many cases extensive localized adhesions, which result, I believe, in some instances in complete obliteration of the appendix. In other cases it gives us the thickened, swollen, sensitive appendix, and in some one of the attacks perforation occurs, when a train of symptoms presents very much like the acute perforative ones. In still other cases, in some one of the attacks, suppuration takes place and an abscess forms which may find its way external or becomes that kind of a case in which, as we know, the abscess cavity is emptied into the pleural cavity; emptied into some portion of the intestinal tract; emptied through the lumbar region, down the thigh, and at the umbilicus; in the left inguinal region, particularly when the appendix is found drawn over on that side (as is well known, we have left-sided appendicitis)—in fact, there is no limit to the possibility of where such an abscess may terminate. For these latter suppurative cases the general practitioner is not yet thoroughly on the alert.

Catarrhal appendicitis with suppuration is a form met with not infrequently, and not especially the result of any foreign body resting in the appendix, or even due to fecal concretions. It is possible for it to result from some traumatism. We know that the bacillus coli communis has much to do with it.

Relapsing Catarrhal Appendicitis. There is in connection with these cases an inflammatory condition that is quite pronounced. The patient will complain of pain in the locality of the appendix. There is increased pain on pressure, and the McBurney point is to be observed. There will be, in many instances, the so-called tumor. There is an increased pulse-rate and temperature;

in some instances a chill or more. There will be constipation present, but the pain is not quite so terrible as the spasms or the suffering that the patient has in acute perforative appendicitis. The administration of a laxative, the use of rectal enemata, local application of heat or cold, relieves and places the patient in a condition of rapid recovery. Of this class of cases of catarrhal relapsing appendicitis every practitioner sees not a few. These are the cases that give so favorable a result in the medical treatment of appendicitis. No doubt the so-called olive-oil treatment, keeping the bowels in a fairly laxative condition, does great good, and, with or without the obliteration of the appendix, many of these cases recover after one, two, three, or four attacks; yet we know, when we take into consideration the very small mortality accompanying the operation for removal of the appendix in relapsing appendicitis, that the death-rate is not as great as in cases where the catarrhal appendicitis becomes more dangerous with each attack, with ulceration or perforation occurring finally, peritonitis and death resulting as in the case of acute perforative appendicitis. In these cases of catarrhal relapsing appendicitis the irritation may be alone within the appendix, which produces a more prolonged inflammatory condition; the patient may still recover, but the appendix is left strictured at points, a stenosis presents, and the patient in these cases has a more or less constant condition called appendicular colic. When the inflammatory condition is confined to the appendix only, it is astonishing how enormously distended it will become at times. The description of the pain in these cases is exceedingly interesting. If the appendix is long it will sometimes reach back underneath the mesentery of the cecum—is found not infrequently behind the cecum, up toward the lumbar region; if an abscess results it may be opened at this point, all or a portion of the appendix removed, the peritoneal cavity not entered, followed by recovery. These cases of chronic relapsing appendicitis give at times marked constipation and threatened obstruction of the bowels, particularly if the appendix is long in its anatomical structure and dips down in the pelvis; or it will form adhesions elsewhere and become the band that constricts even portions of the large intestines, not infrequently the small intestine, producing complete obstruction. In other cases the appendix may be very short; it drops down into the lower portion of the inguinal region, attaching itself to the inferior and lateral wall of the pelvis, and becomes adherent. Sup-

puration may occur and pus form, but the adhesions have shut off the appendix from the peritoneal cavity, and we have now that class of cases such as have been operated upon for many, many years by the Hancock-Parker operation, almost uniformly recovering, and yet even here it will be safer for our patients to have an early operation after one or two well-marked attacks of catarrhal appendicitis.

I would say, then, in making a classification of appendicitis, let us adhere as closely as possible to the line of conservatism, keeping constantly in mind the possible anatomical structure and position of the appendix, as is illustrated to us who are operating more or less constantly, but which is not so firmly fixed in the mind of the general practitioner.

The very long appendix is illustrated again in such cases as occur where we sometimes open the abscess through the rectum (bringing with the discharge and the washing out a foreign substance, or a portion of the sloughing appendix itself; to repeat, precisely shown when we open the abscess that is met with about the lumbar region, and there, in like manner, have every evidence of the trouble having originated in the appendix. Also as abundantly illustrated in our cases of operation for obstruction of the bowels; again always bearing in mind the possible anatomical condition of the appendix).

Let me emphasize: make our classification of appendicitis as simple as possible. We must overcome the impression that prevails in the mind of the general practitioner that a foreign substance causes all the trouble. We know this is the case in only a minority of our patients. The bacillus coli communis is the important factor.

I would say, then, we have:

First, acute perforative appendicitis, such as I have described.

Second, catarrhal appendicitis—a pathological condition due to the bacillus coli communis, possibly some traumatism, possibly some foreign substance, relapsing in its character, one or more attacks occurring with shorter or longer intervals. In some cases it is accompanied with suppuration and abscess within or without the peritoneal cavity; in other cases the attack results in perforation, causing death, very much as in acute perforative appendicitis.

The diagnosis in all these cases should be made as clear and distinct as possible, and the earlier the better.

Acute perforative appendicitis, with or without suppuration, requires but one line of treatment, and that is surgical interference; and these are the cases which we have not yet succeeded in rescuing to the extent of making our mortality-list anything but large. The earlier the diagnosis is made by the family physician, and the sooner the operation is done in the future, the greater will be our recovery-list.

I wish it to be distinctly understood that in doing the operation in these cases they are not to be confounded with cases of relapsing appendicitis or removal of what is really almost a normal appendix. These forms of catarrhal appendicitis I have referred to sufficiently. If the patient has but the one attack we will probably find that neither they nor ourselves as operators feel like having an operation; but when the second attack presents, the third, fourth, etc., then an operation would seem to be absolutely necessary, as the rate of mortality has been so decidedly small.

Within a period of eighteen months I have done fifteen of these operations without a death, and have found the appendix in all conditions imaginable—short and long, obliterated to a mere string, in other cases enlarged, elongated, and swollen, with adhesions very extensive and embarrassing, in some cases associated with a sinus still discharging from a previous abscess, very few cases presenting a foreign substance, fecal concretion or otherwise.

In this short paper I have made no attempt to enter into the pathology and pathological changes of the appendix itself. This ground has been thoroughly covered in many able articles already published. Nor do I know that I have accomplished much in simplifying the subject; but I would most earnestly ask of the Fellows of our Associaton, when talking with the general practitioner, the family physician, when lecturing to their students, to simplify the subject as much as possible. It is sometimes distressing to hear the earnest, hard-worked country or city practitioner attempt to enter into the minute description of the particular variety and form of appendicular trouble with which he believes his patient is afflicted. Let us impress upon them the importance of not making the error of considering the case to be one which it really is not, overlooking the true condition. Rather let us make our consultation visit one that assists in a clearer, more correct diagnosis; one that does not mystify, but really aids.

RETROVERSIONS OF THE UTERUS.

By EUGENE BOISE, M.D.,
GRAND RAPIDS.

I FEEL that I should beg your indulgence if the first part of my paper seems elementary, but, that I may make clear what I consider the rational treatment of backward displacements of the uterus, it is perhaps best that I recall to your memories some points about its anatomy.

The uterus, as normally situated, lies almost at right angles with the axis of the body, the fundus suspended behind the pubis above the bladder, the cervix pointing backward and a little downward. From the sides of the uterus the broad ligaments pass laterally to the sides of the pelvis. In their folds are the round ligaments, which pass from the uterus at a point just below the Fallopian tubes laterally and forward to the internal inguinal rings. They are composed largely of involuntary muscular fibres and fibro-cellular tissue.

From the posterior surface, at the point of greatest convexity of the organ, and at about the junction of the cervix with the body, are the utero-sacral ligaments, which are composed principally of aggregations of fibro-cellular tissue with some muscular fibres. They are covered with folds of peritoneum. All *retroflexions* of the uterus occur *at* or *just above* the point of insertion of these ligaments.

From the anterior surface two bands of fibro-cellular tissue pass forward to the bladder, but as they play only a minor part, if any, in backward displacements of the uterus, I shall not describe them. In addition to these there is a certain amount of support from the vagina and its surrounding tissue. Supplementing and equalizing the power of these various ligaments is the force of intra-abdominal pressure, by which, under normal anatomical conditions, the uterus is held anteverted in the superior strait of the pelvis.

The uterus, suspended thus by its ligaments, is normally allowed a certain amount of mobility. This remains normal as long as the uterus, by its supports, retains the power of complete restoration to its normal position when displaced in any manner. When that power is lost in any degree, in so far is the condition pathological.

The body of the uterus rests, in a more or less anteflexed condition, on the bladder as on a cushion, and yields to the greater or less distention of that viscus. When the bladder is severely distended the fundus of the uterus is pushed far backward and the organ is more or less perpendicular in its relation to the superior plane of the pelvis—a position which allows the intra-abdominal pressure to be exerted in a direction that will cause descent of the uterus, the resistance of the utero-sacral ligaments being first overcome. The peculiar function of the round ligaments is, to my mind, indicated by their structure. Composed as they are largely of involuntary muscular fibre, we would naturally look for some muscular action on their part, and this they undoubtedly exert in drawing the fundus of the uterus back to its normal position of anteversion (following the contracting bladder). This, I think, is accomplished largely by muscular action and not merely by the quality of elasticity. But all muscular fibre tends to lose its contractile power by excessive or too prolonged tension, and, in the case of the round ligaments, weakened or tardy contraction allows the intra-abdominal pressure to exert its power toward backward and downward displacements of the uterus. This is generally a more or less gradual process, by reason of the resistance of the utero-sacral ligaments, which supplement and aid the round ligaments in preventing complete displacements; and as long as these remain normal in length and strength any displacement backward would necessarily be in the nature of a flexion.

Therefore, given relaxed or elongated round ligaments, there must of necessity be more or less backward displacement of the fundus of the uterus, especially when in the recumbent posture.

As long as the utero-sacral ligaments remain normal in length and strength the fundus will fall forward again when the erect posture is resumed, except in cases where structural change in the tissues of the uterus has occurred, causing permanent flexion. In other words, as long as the utero-sacral ligaments remain normal the displacement, if any, will be a retroflexion. When the pressure

on the displaced fundus results in stretching of these ligaments to a degree equal to that of the round ligaments, the displacement will be a descent of the entire organ in the axis of the pelvis. When both sets of ligaments are overstretched, the round ligaments much more than the utero-sacral, a retroversion results. The cervix, held by the latter ligaments, is thrown upward and forward as the body of the uterus descends into the hollow of the sacrum. There can be no prolapsus without overstretching of both sets of ligaments; and there can be no retroversion without this same condition but with disproportionate relaxation of the round ligaments.

In nearly all uteri which are in a state of retrodisplacement there is more or less obstinately chronic endometritis. It is as necessary that this should be relieved as that the malposition should be overcome, and disappointment will generally be the portion of one who relies on restoration to the normal position to correct the malnutrition of the organ and remove the endometritis. Active measures to cure this condition should coincide with efforts at restoration to normal position.

In all cases of endometritis in retrodisplaced uteri thorough dilatation with curetting should be the first step, accompanied by careful and thorough irrigation of the uterine cavity with an antiseptic solution, followed by the application to all parts of the cavity of a solution of equal parts of carbolic acid and tincture of iodine or some similar medicament.

I do not practise packing the uterus with gauze at the time of an Alexander operation or a ventrofixation, on the theoretical grounds that removing and replacing it might interfere with the permanent fixation of the organ.

This procedure, I say, should precede all efforts at permanent reposition of the displaced organ, even if these efforts consist only in the careful fitting of a pessary, since, to be valuable as a curative agent, a pessary should be worn *continuously* as long as cleanliness will allow.

If in addition to the endometritis there exists subinvolution or chronic metritis with laceration of the cervix, little will be gained by restoration to position without proper repair of the laceration, removing all cicatricial tissue and diseased glands, and bringing the parts accurately together in the manner described by Emmet. It will not be necessary, in speaking to an American audience, to

dwell upon the advantages of this procedure, as experience is the most convincing argument.

Having done all that is possible to place the uterine tissue in a healthy condition, the important question asserts itself, How shall we *permanently* restore the uterus to its normal position? Until comparatively recent years the retroversion pessary held the leading place among all who treated diseases of women, because it was easy to place and seemed to hold the uterus in position. So many reliable men have asserted that a pessary will sometimes effect a permanent cure of retroversion that we are obliged to accept the statement as true.

It is universally admitted that a pessary accomplishes its mission, not by holding the body up in its position of anteversion, but by holding the cervix back and thus preventing a recurrence of the retroversion.

If the tissues of the uterus are firm, so that the organ is not easily bent, a pessary will accomplish its purpose fairly well by holding the cervix back and allowing the force of intra-abdominal pressure to keep the fundus in a position of anteversion.

This one fact should be a convincing argument to us of the immense importance of the normal utero-sacral ligaments in the proper support of the uterus, and should teach us that any method which does not include the restoration of these ligaments as nearly as possible to the normal is imperfect. In those cases where the pessary accomplishes what seems to be a permanent cure these ligaments are shortened, or perhaps I should say supplemented, by the substitution of organized plastic exudate, caused by the irritation induced by pressure of the pessary on the tissues posterior to the cervix.

That the round ligaments become shortened and regain their contractile power simply by lifting the uterus into position by a pessary, and thus relaxing the tension placed on them, is to my mind problematical. I do not think that ligaments that have been so overstretched by a chronic retroversion of the uterus ever completely regain their tone.

The importance of shortening the utero-sacral ligaments, and thus accomplishing with some degree of permanence the same indication that a pessary meets temporarily, has been recognized by many operators, notably Sänger, of Berlin, and Byford, of Chicago;

but that procedure, unsupported by other operative measures, did not meet the indications for a permanent cure, inasmuch as the fundus was left unsupported, and the deleterious influence of intra-abdominal pressure in causing downward displacement and renewed stretching of the utero-sacral supports was unimpeded.

It was therefore abandoned and operative procedures looking toward holding the fundus of the uterus forcibly forward were substituted. Among the earliest of these was the Alexander-Adams operation, which for a time created a great enthusiasm as being the natural method of accomplishing the desired end. But because of the difficulty experienced by many operators in finding the ligaments, and because it was not applicable to all cases, a violent reaction occurred, and the operation fell into disrepute.

But today the Alexander operation, as modified by modern operators and supplemented by shortening of the utero-sacral ligaments (or, where this cannot be done, the creation of a band of organized adhesions holding the cervix back in its normal position), is the ideal operation in all cases not complicated by adhesions or badly prolapsed ovaries.

Shortening the round ligaments without any supplementary procedure may fail to give the desired permanent relief, because of the unnatural mobility of the *lower* part of the uterus.

When in the erect posture, after an Alexander operation, the uterus hangs more or less in the axis of the pelvis, held in a position of comparative anteversion by the forward force of the round ligaments and the backward force—acting on the anterior surface of the cervix and lower part of the body—of the more or less distended bladder and the perivaginal tissues, but intra-abdominal pressure tends continually to promote descent of the organ.

That the uterus must be placed and held in a position of anteversion, if we would make the cure permanent, has been universally recognized, and various methods have been adopted to accomplish this purpose, from the infolding of the round ligaments on the anterior surface of the uterus, through the various methods of ventrofixation, to the method proposed by Mann of folding the round (and broad) ligaments on themselves and uniting the folds by sutures.

The folding of the round ligament on the anterior surface of the body was quickly abandoned, because it prevented, in a degree, the

end sought, inasmuch as the fundus was thrown further back than normal, and sufficient anteversion was not obtained.

For the same reason the anchoring sutures in ventrofixation have been shifted from the round ligaments and the anterior surface of the uterus, where they were first placed, to the ovarian ligaments and the *posterior* surface of the fundus, because only in this way could the organ be brought into the desired condition of anteversion. These ventrofixation procedures are faulty in that they immobilize the upper part of the uterus and leave the lower portion too freely movable; in that they interfere with the normal upward distention of the bladder and force it to distend backward; in that they offer a possibility (remote, I think) of incarceration of intestine; and in that, though pregnancy may occur and go on to normal completion, the development of the uterus is generally abnormal and miscarriage frequently results.

In *all* attempts at permanent cure of a retroversion of the uterus the operation of choice should be shortening both the round and utero-sacral ligaments to their normal length. By this means, and by this means only, can the parts be restored to their normal conditions; and restoration to the normal is the highest ambition of surgery.

The majority of cases now treated by ventrofixation can be better treated by this modified Alexander's operation.

This truth has been recognized by those surgeons who, after opening the abdomen and breaking up the adhesions, have attempted to hold the uterus permanently forward by folding the round ligaments on themselves, but these procedures have never gained the approval of the majority of operators because of anatomical faults.

When the round ligaments were folded in front of the fundus of the uterus it was thrown too far back and a normal position was impossible. The folding of the round and broad ligaments on themselves, as recently advocated by Dr. Mann, though an effort in the proper direction, seems to me faulty by reason of the acute bending of the vessels, nerves, and lymphatics of the broad ligaments.

It goes without saying that in all cases of retroversion with adhesions the adhesions must be thoroughly broken up before any attempt at replacing and securing the uterus is made; and, in my

opinion, the best way to do this is by opening the abdomen and separating them thoroughly under sight.

The gradual methods by massage and pressure by medicated tampons are too uncertain in their results to allow us to hope for permanent cure by pessary or surgical effort. The method of separating these adhesions forcibly through the rectum, known as Schultze's method, is not advisable, owing to its uncertainty and danger.

Vaginal section through the *cul-de-sac*, for the purpose of freeing an adherent retroverted uterus, has been advocated strongly, and it has some advantages over the abdominal route and some disadvantages. There is less shock, there is no danger of ventral hernia—these are the only marked advantages. Through the vagina the ovaries and tubes can be inspected and removed, if necessary, and the utero-sacral ligaments can be shortened as well as through the abdomen. But the abdominal route is better :

1. When the ovaries are not so diseased as to necessitate their removal, but are fully prolapsed ;

2. When in the process of breaking old firm adhesions a laceration of an intestine occurs ; and

3. When, after freeing all the adhesions, it is found that the Alexander operation is not possible or is inadvisable. In such case ventrofixation (or "uterine suspension") must be made.

Badly prolapsed ovaries should be sutured to the upper borders of the broad ligaments, as acute flexion of the veins tends to chronic interstitial oöphoritis.

I have had no practical experience in vaginal section for the purpose of freeing adhesions or removing appendages, and therefore it may be that I am not a qualified critic, but I am of the opinion that for permanent reposition of firmly adherent retroverted uteri all the indications can be better met by abdominal section.

When the adhesions have been separated the uterus is in a condition similar to if not identical with one originally non-adherent, and should be treated the same. That is, the fundus should not be immobilized by suturing it to the abdominal wall, but should be brought forward into its normal position by shortening the round ligaments. If, in addition to this, the utero-sacral ligaments are shortened, thus drawing the cervix back to its normal position, the indications are accomplished.

But I am unable to subscribe to any method yet proposed of intra-abdominal shortening of these round ligaments. I believe that the more rational method is by opening the inguinal canals and drawing the ligaments forward until the required amount of shortening has been secured. The objections that may be urged to this method are that it necessitates additional wounds and scars; that by reason of the added wounds there is added risk of infection; that it may require longer time than a ventrofixation; and that to the possibility of ventral hernia through the abdominal wound is added the danger of inguinal hernia.

The first objection should have no weight when balanced against the advantages of the operation, inasmuch as with care in closing the wound little or no scar will be left after a few months. The increased danger of infection can be guarded against with a little care at the time of operation and afterward. That the operation may take more time than a ventrofixation is an objection whose force will be lessened with increased experience. The alleged danger from inguinal hernia is one that must be guarded against carefully, though in my own practice I have never seen a case. I think, however, that by exercising care in closing the fascia and wound the danger of subsequent hernia may be practically excluded, or by using the technique recently proposed by Dr. Cleveland whereby the canals are not opened.

The various steps of the operation which I advocate are as follows:

First (the vagina having been thoroughly disinfected), drawing the cervix forward until the sacro-uterine ligaments are made as tense as possible; denudation of vault of the vagina in a direction corresponding to the ligaments to as great an extent as may be necessary; passing a large curved needle from one end of the denudation to the other through the longitudinal axis of the ligaments, armed with large or chromicized catgut, and leaving the ends of the catgut free (clamped by forceps) to be tied later.

Next, thorough redisinfection of the hands; opening the abdominal cavity through one of the recti muscles, care being taken to separate the fibres of the muscle without cutting or tearing, breaking up the adhesions carefully; treating the appendages according to indications, care being taken not to injure the round ligaments; then temporary covering or closure of the abdominal wound. After

this open the inguinal canals and draw the round ligaments forward as far as may be necessary, care being taken not to leave them too tense; then careful, accurate closure of the fascia by interrupted sutures of sterile chromicized catgut or kangaroo-tendon, passed through the ligaments in such a manner as to hold them in close apposition to the under surface of the united edges of the fascia. These sutures should be tied securely and left buried by closing the integument with continuous catgut suture, subcutaneous if preferred.

The position of the uterus should be verified through the abdominal wound before the sutures which fasten the ligaments in the inguinal canals have been tied.

Close the abdominal wound by a continuous catgut suture which unites the peritoneum; by interrupted catgut sutures (chromicized) or by kangaroo-tendon, passed through the fascia, by which its edges must be carefully approximated; and, lastly, closing the integument as in the inguinal wounds.

The fibres of the recti muscles may be drawn together by suture or not, as desired; generally they will be brought closely together by the sutures which unite the fascia.

Finally, tie the vaginal sutures, and thus draw the cervix back to its normal location.

By this procedure the uterus will be placed in a position as nearly anatomically and physiologically normal as possible.

NEURASTHENIA ACCOMPANYING AND SIMULATING PELVIC DISEASE.

By C. C. FREDERICK, M.D.,
BUFFALO.

All specialists are more or less justly open to the criticism which the general profession sometimes makes concerning them—viz., that they are liable to ascribe most of the ills of humanity to derangements which they may find in the realm of their special practice. In other words, the specialist's horizon is very apt to be narrow, largely because in too many cases he has not had that broadening experience which comes from a few years of general practice, wherein the physician learns much of the mutual relations of different parts of the human organism in health and disease. It is feared that the same criticism has not unjustly been made against those members of our own specialty who find all the ills which woman's flesh is heir to resident in her genitalia. Nearly all women who suffer from chronic inflammatory disease of the pelvic organs also have neurasthenia to a greater or lesser degree. This also accompanies new growths of the pelvis in some cases.

What is neurasthenia? It is an exhaustion of the nervous system, especially the sympathetic nervous system, due to malnutrition. Systemic poisoning from pus, the nerve-depressing influence of constant pain, or the continuous drain of blood or muco-purulent discharges, together with other depressing influences, produce this malnutrition in cases of pelvic disease.

The symptoms are usually nearly the same in all cases. The woman is tired, constantly tired, especially in the morning and early part of the day. Her sleep is not restful. She may sleep well during the early hours and lie awake the rest of the night. Her sleep may be in snatches, or it may be disturbed by hideous and exhausting dreams. There is almost constantly a tired feeling in the head, and her eyes are weak and irritable. She especially

complains of a dull, indescribable sensation which may be vertical, but usually is located in the lower occipital and upper cervical regions. Neuralgia, particularly of the intercostal and lumbo-abdominal types, is generally present. Backache in the lumbo-sacral region is one of the most persistent of all the symptoms. Despondency is the ruling condition. Timidity is a prominent symptom, and the apprehension of something awful impending makes life miserable. Usually there is a poor appetite and nervous dyspepsia. The more rest the patient takes, the less her nervous force is exhausted, the better is her digestion. Flatulence and constipation, it is needless to say, are found among the symptoms.

The least excitement brings on an attack of cardiac palpitation, and at times this comes without excitement. Often when the woman lies down she feels a sense of suffocation. It is not asthma; it seems to come in much the same way as the globus hystericus. These various symptoms lead the patient to be apprehensive of some severe organic trouble of the heart or lungs. At times the urine is scanty and thick; at other times it is abundant and as clear as water.

There are certain vasomotor disturbances, such as blushing and flushings of the face, red spots coming unilaterally, followed perhaps by extreme pallor and a cold sensation in the skin. Profuse perspirations occur as the result of excitement, exertion, or sleeplessness. The hands and feet are seldom warm; they are usually cold and clammy.

When none of the vital organs are structurally diseased in cases manifesting the above symptoms, we may safely ascribe these to the fact that the sympathetic nervous system which presides over vital phenomena becomes absolutely unable to furnish enough force to carry on the processes of nutrition up to the normal, and, being itself half-starved and weak, manifests its condition in those perturbations which have been described. Much has been written concerning those cases of disease of the pelvic organs which have been either unimproved or else made worse by operation. We must admit that many cases have continued, after operation, to have pain, hemorrhage, and exhausting discharges which have prevented recovery. But there are others in whom operation fails to give the expected relief, even though no cause for their continued invalidism seems to exist.

Even those who have pain, hemorrhage, leucorrhea, and their old tired and miserable feelings remaining, may, in a goodly proportion of cases, be cured if after operation the shattered condition of their nervous systems be appreciated and proper treatment addressed to its relief. When we have removed diseased structures from the woman's pelvis or abdomen, or have closed lacerations and restored her uterus to its normal position, our duty to her is not all done. Shall we send her home as soon as she can arise from her bed, and call her cured because we have performed an operation? When a fire is extinguished do we expect as the result of the act a restoration of the wrecked structure? Should we expect that a woman who has suffered for years, it may be, and whose nervous system is exhausted, whose red blood-cells are few and of poor quality, and whose white cells are numerous and of those forms which show a depraved state of nutrition, will be restored to health simply because we remove the cause which has ruined her health? After we have removed the primary cause of her shattered health should we not do something, if something we can do, to restore her exhausted nervous system, to set again in normal motion the machinery of nutrition and assimilation?

We have all seen those women who have been operated upon, who come to us and inquire whether Dr. Smith or Dr. Brown really did do the operation which he said would cure her. She is no better, has as much pain as ever, is pale, anemic, and tired. You will find that the woman probably was operated upon; the operator took his fee; the woman went home in two or three weeks, never having had so much as a mild tonic prescribed after her operation. I have taken such under my care, and in six weeks have sent them home on the high-road to recovery, and have had the satisfaction to know of their subsequent entire restoration to health.

Tonics benefit these women but slightly till nutrition begins again, when they are assimilated and aid greatly in completing the cure.

The treatment which above all others promises most for these neurasthenics is the Weir Mitchell rest-treatment. It should be carried out quite rigidly, because when laxly done it is liable to fail. The rationale of the plan is based on sound physiological principles. The patient is placed in bed, away from cares and

worries. In order to avoid fatigue she is denied all visitors except one or two intimate and congenial ones for short periods. The diet is simple and nutritious. The secretions and excretions are regulated. Faradic electricity is sometimes given to exercise the muscles. Next to enforced rest, massage is most important, as it counteracts the ill effects of the former. It presses out of the cells the results of tissue waste; it squeezes on through the capillaries, veins, and lymphatics vital streams which would be oversluggish without it. It is exercise without the use of volition or nerve-force to produce it. The appetite increases; digestive power is augmented; the blood cells become normal in number and condition; the patient loses one by one the symptoms of which she has complained; sleep becomes more normal and restful; nutrition of the tissues increases; nerve-force is stored up—in fact, in from three to six weeks the patient feels well enough to begin to sit up. It is necessary, in order to obtain the full benefit of the treatment, to be careful in not getting about too soon; careful in avoiding the assumption of household duties; careful for weeks in everything which pertains to work, worry, or excitement.

The above is a faithful picture of the majority of these cases. Occasionally there is one upon whom this treatment has no good or permanent effect. In all women who show much nerve-exhaustion and anemia before operation I begin the massage as soon as they are able to bear it, usually during the first week after operation.

There is another class of women in whom neurasthenia simulates pelvic disease. It occurs in those of the nervous temperament. It is a frequent ailment among our American women. It is seen alike among the rich and the poor, the fleshy and rotund as well as the thin and spare of form. Those of neuropathic tendencies, placed in the proper environment, with worry, overwork, overexcitement, overanxiety, errors in diet and rest, too frequent child-bearing, or excessive sexual indulgences, break down under the strain, and nervous exhaustion is the common form of manifestation.

The symptoms described as accompanying pelvic disease are here present without the pelvic disease, but we frequently have its counterfeits. Painful menstruation comes to her who may never have had pain when she was well and strong. Leucorrhea may be a

prominent symptom. Pain in the back, radiating through the pelvis into the groin and down the thigh, with or without frequent and painful micturition, seems certainly to point to some serious disease in the pelvis. There is generally a decline in sexual appetite, and the marital relations may become positively repugnant. In others there is an irritability of the sexual apparatus, followed by overindulgence, which only leads to greater exhaustion.

These women come to us expecting us to pronounce the verdict that the uterus, tubes, or ovaries are in some way the direct cause of their ills. On examination the pelvic organs are usually found to be tender. The pain resulting from their examination and the muscular tension may lead us to think that we feel enlarged and diseased structures. They should always be under an anesthetic before a diagnosis is made. If there is no pelvic disease the patient may safely be put into that class which Dr. Goodell so aptly described in his chapter on "Nerve-tire and Womb Ills."

Correcting as far as possible the habits of the patient which led to the nerve-tire, general tonic treatment and good environment, and above all else the Mitchell rest-treatment, bid fair to do as much for these women as human skill has thus far devised. Many of them can be nearly or quite cured, and others only partially relieved. Removal of tubes and ovaries which are simply tender and not diseased always adds to their suffering.

Neurasthenia is often sneered at as "that fashionable American disease." Call it neurasthenia, nervous prostration, or what you will, the condition nevertheless exists. As it accompanies pelvic disease, and as it simulates pelvic disease, it is a monstrous stumbling-block at times to the brilliant results which our operations seem to promise.

THE RELATION OF PELVIC SUPPURATION TO STRUCTURAL CHANGES THAT MAY OCCUR IN THE FALLOPIAN TUBES.

By AUGUSTUS P. CLARKE, M.D.,
CAMBRIDGE.

Since the question respecting the genesis of peritonitis has by extended pathological investigation been settled, more interest has been taken in determining the cause of pelvic suppurative processes. My attention was quite early drawn to the subject by there occurring in my own practice a series of cases of pelvic inflammation. In looking over the record of the histories of some thirty different cases of pelvic suppuration that took place in the female, I found that, though the original factors in some instances were seemingly different, there appeared nevertheless in each case symptoms and a course in the disease that had their starting-point in some common lesion or morbid process.

By careful and patient examination I found that I was able to locate the disease or condition as connected with the Fallopian tube. This was facilitated by placing the patient in the dorsal posture and by employing vaginal and rectal indagation. By following the direction as laid down by Martin, of Berlin, I noticed that it was not difficult to determine the condition of the tubes, especially when they had undergone in any marked degree an enlargement or alteration. Tubal palpation was most easily accomplished by commencing at the uterine portion of the canal and following it along in an endeavor to map out its course. In a larger series of cases it was observed that the conditions, connected with the tube, leading to pelvic suppuration varied. There was not always a pyosalpinx, though this feature of a case has often led to pelvic abscesses recurring at different intervals. In some cases, as was proved by a resort to laparatomy, the purulent exudation must have passed through the infundibulum or through the

altered mucous and the disorganized muscular structures of the tube in its escape into the peritoneum. In one case, that of a married woman, aged twenty-nine years, the purulent exudation seems to have broken through an old walled-off pus-cavity of the right tube, and to have pointed and to have been discharged through Douglas's posterior cul-de-sac; the patient was not permanently relieved until after the removal of the tube and ovary of that side. Gonorrheal infection of the tube in a large number of my cases was clearly traced as the cause of the disease in question; still, the presence of other bacteria in the tubes was not uncommon. Tubercular infiltration of a tube and an ovary has been met with. In the case of Mrs. C., aged thirty-one years, pelvic suppuration rapidly supervened after the patient had suffered from more or less ill health for some three years. The patient had previously given birth to two children that appeared to be fairly well developed. Her health, soon after the birth of the second child, gradually failed her. She had night-sweats and an increasing cachexia that indicated a tuberculous condition, though there were no cough and no signs that showed that the lungs were involved. Vaginal and rectal indagation and palpation revealed that there was an enlargement of the left tube and ovary. The implication of the pelvic peritoneum at first was of the milder grade, but ultimately became more marked. At no time after I was called did a resort to salpingo-oöphorectomy appear to be for that case a justifiable procedure. The autopsy revealed that the tube and ovary were in an advanced condition of a tubercular cavernous degeneration and that the pelvic peritoneum, though everywhere studded with tuberculous deposits, was for the most part in a commencing stage of involvement. I have felt that had the tube and ovary been excised in the initial period of the disease and before I was first called, the patient's life might have been prolonged. The primary infection of the tube of this patient may have resulted from the marital relation with a former husband. One case of pelvic suppuration resulted undoubtedly from the presence of actinomyces of the right ovary, involving the tube. The excised growth was examined microscopically by the late Dr. Samuel N. Nelson, who had been a careful student under Professor Koch, of Berlin, and who regarded the development as the result of actinomycosis.

In this paper it is not my purpose to enter into any elaborate

consideration of the causes of local affections leading to the involvement of the tubes, but merely to state that in dealing with cases of pelvic suppuration it will often be found necessary to extend the inquiries regarding the course from the pelvic peritoneum, at which the exudation may have been effused, to structures that are peculiarly susceptible to morbid changes. In searching for tissues or parts that are prone to become centres of diseased conditions, careful investigation will often show that the Fallopian tubes occupy no unimportant seat as points of beginning. The records of my own practice prove unmistakably that gonorrheal infection of the tubes is a most productive source of pelvic suppuration. In the histories of twenty-three cases in which the tubes presented indications of being the foci of gonorrheal disease I find that the infection in four instances led to pelvic suppurative processes. In one of the cases, that of a woman aged thirty-three years, there had been an old pelvic cellulitis, but the inflammatory condition had been limited and had not reached any portion of the peritoneum. Rectal examination showed that the induration resulting from the cellulitis was posterior to the uterus. This attack seems, however, to have caused but comparatively little trouble to the patient, except it produced more or less anterior displacement and dysmenorrhea. The attack had its origin undoubtedly in parturient processes. After the accession of the specific inflammation the tubes were invaded at an early date. The pus from a pyosalpinx or tubal abscess on the right side escaped into the peritoneum and appeared in Douglas's cul-de-sac. The general and constitutional symptoms were unusually marked. The old site of the cellular infiltration was impinged upon, and the consequent hardness was to a considerable degree overcome; this had the effect of causing adhesions of the uterus with left lateral displacement. Notwithstanding these unfavorable sequelæ the patient after some two years so far recovered as to become pregnant with a favorable termination. In looking over the record of the cases referred to it is interesting to observe what a small proportion of them was followed by peritoneal involvement. The presence of such a condition to so limited an extent supports the conclusion that has heretofore been reached by some observers, that the purulent exudation is by the rapid formation of plastic material often walled off to such a degree as to protect the peritoneal tissue from the dire con-

sequences an attack of the disease would involve. In many instances of such cases, if not in most, the gonococci undergo destructive changes and are so prevented from exciting further pathological change. The final conditions resulting from the agencies of gonococci are often in striking contrast to those that may occur from the presence of other forms of bacteria. This was exemplified in the cases of Mrs. G., aged twenty-seven years. An evident salpingitis on both sides had resulted from an upward extension of uterine inflammation occurring some time after an abortion at an early date of pregnancy. The history and symptoms pointed to purulent involvement of the tubes from the invasion of gonorrheal inflammation. The peritoneal tissue escaped from the ravages of the morbid extension, though the tubes had undergone contraction and undoubtedly other manifest destructive changes. Excision of the tubes was considered as a possible outcome. After the lapse of several months pregnancy again took place, thus showing that the tubal element had not undergone permanent closure, or, if closed, relaxation did occur sufficiently to allow the passage of the spermatozoa.

Inflammatory processes occurring in the tubes from the presence of streptobacteria and from their allied forms are of most serious import. These forms of bacteria, so far as my own experience and observation have extended in the treatment of a considerable number of cases, have appeared to be difficult to bring under control. Pyosalpinx from the presence of streptococci does not always so readily become encysted or walled off as does a purulent formation that has appeared from specific infection. Catarrhal inflammation occurring in the tubes, or suppression of the menses, may cause lighter forms of inflammatory processes and may lead to pelvic suppuration, but such a sequela would be of rare occurrence. Chronic interstitial salpingitis is for the most part a mild type of tubal inflammation, and it may for some considerable period be limited in its course to the mucous and submucous coats; the morbid action may continue and so lead to the formation of pyosalpinx or muco-purulent exudation. An ovarian abscess may occur in connection with pyosalpinx, but this seeming complication is only a mere extension of the morbid process of the tube, and if left unrestrained may hasten the development of pelvic suppuration. An ovarian cyst may rupture into the peritoneum, but this event is more likely to occur after the tube

has become implicated—obstructed or occluded—especially when purulent or ichorous exudation has taken place in the tubal wall adjacent to the adventitious development. To such a case I was once called, but not until immediately after the rupture had taken place. Had removal of the cyst been effected some few weeks before, the patient could have been saved much severe suffering. Tubal disease may complicate uterine fibroids; this result occurs in the form of hypertrophic salpingitis and in subacute or in chronic oöphoritis. Tubes in this condition may become the foci of further development of pus that may find entrance, through disorganized tissues, into the pelvic peritoneum. This peculiar state of things may necessitate an operation for the removal of the structures enclosing the pus before it will be advisable to attempt total hysterectomy, which the extended fibroid condition of the uterus may render absolutely imperative. The singular variety of neoplasms denominated cystomata of the ovary, and liable to degenerate into a cancerous condition, frequently infect the peritoneum, but this may occur through more or less direct communication, though previous structural changes in the tube may have hastened or led to the cystic formation.

Hydrosalpinx, the result of excessive accumulation of serum in the occluded tube, may excite a further morbid process and so become the nidus of a purulent or muco-purulent exudation; this, if left uncontrolled, may work its way into the pelvic peritoneum. A hematosalpinx may assume a similar though a more threatening aspect. It is not to be denied, however, that many cases when left essentially unrestrained have had a seemingly favorable termination. Other morbid conditions of the tubes, such as the malignant or semi-malignant neoplasms and developments, may give rise to purulent infection of the pelvic peritoneum. Among the most baneful influences resulting from the presence of fibrous tumors of the Fallopian tubes is the tendency to take on malignant degeneration. Such growths furnish the pabulum and nidus for bacterial infection, which later may find ingress into other pelvic structures and into the pelvic serous tissue. A woman having suffered from the effects of any form of tubal disease, unless proper surgical measures have been instituted for her relief, is liable through the exciting agency of various factors to have at any time a recurrence of the attack that may lead to pelvic involvement generally. Pelvic

hematocele, which occasionally undergoes suppurative changes, results for the most part from hemorrhage of the tube ; this may supervene on engorgement, rupture of the vascular tissues, or on other temporary or advanced structural changes of the tubes.

There are other important lesions which occur in the tubes, and which sometimes lead to pelvic engorgement and suppuration, though I will refrain from making further mention of such conditions, since I have already indicated that in presenting this paper it has not been my purpose to furnish a *résumé* of the literature on the subject, but merely to consider and to discuss briefly certain phases of pelvic suppuration arising from tubal disease that have come specially under my observation and treatment.

PARTURIAL SEPSIS.

By WILLIAM B. DEWEES, M.D.,
SALINA.

As you have received with favor the term "parturial sepsis" in my paper on "The Care of Pregnant Women," read last year in the East, when we were assembled in Toronto, Canada, so I present it here in Chicago, as a separate subject, that a full discussion may obtain as to the fitness of its adoption in our literature.

Progress in medicine has developed into a potentiality beyond the dreams of man. It is accepted as a truism that medicine, like all other divisions of science, must become a unit. As science is but knowledge of truth ascertained, and the right use of this knowledge is real wisdom; so is wisdom simply truth, and truth is always simple, like a unit. The great unit of *progressio perfecto* in medicine is to be found only in the simplicity of the truth in nature, and the earnest pursuit of the ideal will bring about organic unity of the doctrines of the medical schools upon the one common solid basis of rational medicine.

Limiting this line of thought to the possible progress in the art of obstetrics, it is but rational to say, that if obstetrics as contrasted with surgery is to make like advances, it must be by the application of accurate methods. This is equally true of nomenclature as of clinical investigation. In no subject in medicine has there been so much indefiniteness in the application of terms as in designating the abnormal conditions occurring during the parturial and the puerperal states. This fact is so frequently manifested in reading our literature, in consultations at the bedside, and in listening to the discussions in medical conventions, that the writer thought it prudent to submit for your consideration and discussion a few facts to clearly define the pathogenic process more properly designated by the term parturial sepsis.

Parturial is coined from the Latin parturire, with a purpose to

signify the bringing forth or about to bring forth young—childbearing. Thus we have the parturial state as comprising the three classic stages of parturition, in contradistinction to the puerperal state, which does not begin until after delivery.

Parturial sepsis is here proposed to designate a septic infection occurring in connection with childbirth ; that is, a sepsis developed subsequent to an infection caused by the introduction of septic poison during the process of parturition, in contradistinction to puerperal sepsis, which properly designates sepsis resulting from an infection caused by the introduction of putrescent substances after delivery—during the puerperium.

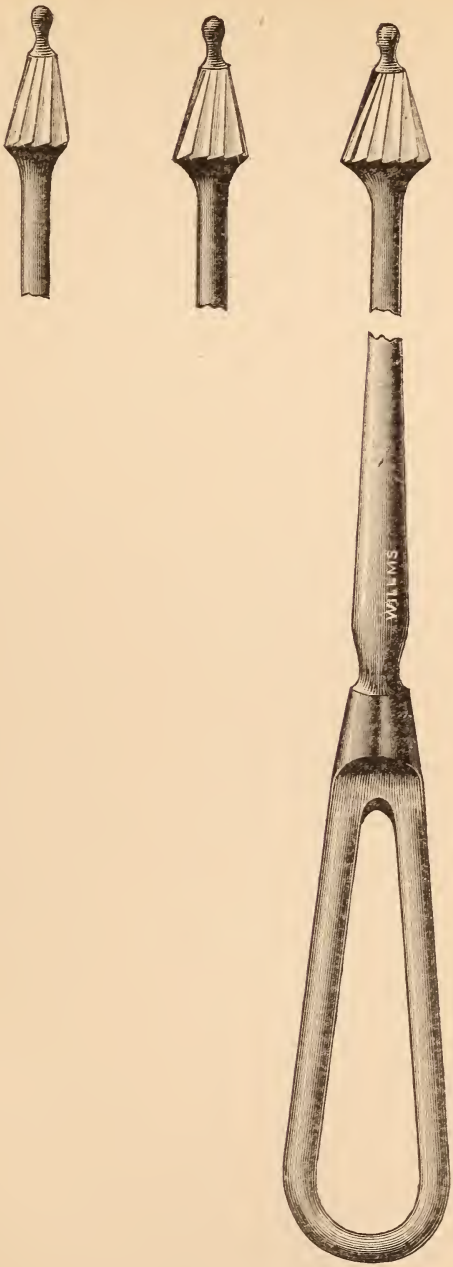
This terminology will progress obstetrics according to the advanced status of surgery. By the now universally accepted term surgical sepsis, surgery has taught the profession to understand clearly—as the etymology of the term implies—a septicemia resulting from a septic infection caused by the introduction of septic poison during a surgical operation. Why not, then, adopt an obstetric terminology of like etymological import, that the general practitioner may, with equal intuitioned comprehension, constantly direct attention to the essential requisite of timely cleanliness, with a deference to reason as to the genesis and the preventable cause in this form of toxemia, in his duties in connection with childbirth, as well as in surgical procedures?

Again, the etiology and pathology of parturial sepsis and of surgical sepsis are similar, in that the sepsis develops subsequent to a septic infection caused by the introduction of septic poison through the solution of continuity of tissue, and recognizable in like manner in both. This fact being conceded, the rationale obtains not to differentiate between the signification of the terms to designate these similar pathogenic processes. The desideratum is rather to synonymize, and thus the term parturial sepsis, like surgical sepsis, will by use obtain to signify the form of sepsis etymologically implied, while our literature will at least be brought one step nearer uniformity in a definite terminology with due reference to the origin of disease.

TREATMENT OF HYPERPLASTIC CONDITIONS OF THE UTERUS.

By WILLIAM A. B. SELLMAN, M.D.,
BALTIMORE.

In the first place, I desire to explain what is meant by hyperplastic conditions of the uterus. Dr. T. G. Thomas, in early editions of his *Text-book on Gynecology*, recognized a condition which he named "chronic metritis" and another condition which he termed "areolar hyperplasia." I have always admired and indorsed this distinction, and it is one which should not be dropped. According to our views on this subject, we do have a chronic inflammatory condition where the uterus is soft, edematous, size increased, and an increased amount of blood in the organ. We would call this metritis. But the condition the treatment of which we propose to discuss goes further. There is permanent blood stasis; the blood is not carried out of the uterus as rapidly as it is received. The vessels become distended, their walls lose their tonicity, and certain elements of the blood contained within them, by a method of exosmosis, pass into the cellular tissue or perhaps even between the muscular striæ. The size of the organ is increased by this excessive amount of blood and serum. There is pressure made upon sensitive nerve-filaments, which gives rise to the pain and sensitive condition experienced by patients suffering from this disease. Plastic material is thrown out into the walls of the uterus. Nature attempts to take care of this material, and does absorb it to a certain extent, but her powers are insufficient in many instances to take up from the uterine tissues the material thus thrown out of the circulation. Again, this increase of circulation taking place during the condition we term "chronic metritis" causes an overnutrition of the muscular fibres and of the utricular glands. The result is that we have a thickening of the walls of the uterus due to this increase of muscular tissue, and we have besides a larger



Sellman's reamer.

amount of secretion taking place in the glands located in the walls of the organ. This accounts for two conditions that we find present in hyperplasia of the uterus, viz., increase in size and weight, and also for the enormous quantity of glairy, white-of-egg secretion that flows out of the cavity of the uterus. Thrust a small, pointed knife or the spear-pointed instrument of Buttle into the tissues of the uterine cervix, and you will have considerable hemorrhage; in fact, you will not only have divided some of the overdistended bloodvessels, but you will have given exit to extravasated blood which was in the cellular and muscular tissues. On account of the intimate connection and condition of circulatory anastomosis existing, the circulation between the uterus, the Fallopian tubes, and the ovaries, at the time we have the oversupply of blood in the tissues of the uterus, at the same time we have an increase of blood in other organs connected with the pelvic circulation.

Now in regard to treatment. We must first unload the overdistended bloodvessels, thereby reducing the size and weight of the uterus, and enable Nature to absorb the materials that may have been thrown out into the tissues—puncturing the cervix uteri with Buttle's spear-pointed knife, penetrating deeply into the tissues, allowing free hemorrhage to take place through the openings, not only dividing the capillaries, but allowing also the material exuded between the tissues to be discharged. The local blood-letting does not depress the patient, as the effect is entirely local. In most cases the uterine tissues are swollen, and there is so much pressure exerted toward the cavity of the uterus that it is with difficulty that the accumulations contained within the cavity find an opportunity to be discharged. Dilate the uterine canal, when you commence treatment, by the rapid method, and enlarge this opening by introducing a reamer, which cuts away any dense structures which may give rise to a strictured condition. Besides, this reaming process opens the closed ducts or openings of the glands and allows their secretions to be discharged into the uterine cavity. Then pass a strip of iodoform gauze into the canal, not sufficient to pack it, but merely to act as a drain and prevent accumulation of material in the uterine cavity. Swabbing the endometrium with iodine and carbolic acid is an efficient aid to the treatment.

The vagina is lightly packed with iodoform-gauze and below that a dry cotton tampon. These dressings act as a pessary and at

the same time absorb the secretions. The intrauterine drain should be changed every twenty-four hours, but the iodine and carbolic applications made only every four to six days. Use your judgment in regard to the use of cauterizing agents. Every third day introduce an electrode (metal wrapped with cotton, moistened with water) attached to the negative pole of the faradic current, placing a moistened felt pad with positive attachments on the abdomen over the fundus of the uterus. I prefer the secondary current with a coil of small wire of moderate length. If the patient is very sensitive and nervous use a longer coil. The application is kept up for twenty to twenty-five minutes. This treatment causes contraction in the muscles of the uterus, and a certain amount of blood is forced out of the bloodvessels by the effect of the current. Very frequently, after making use of the intrauterine electrode we introduce a cup-shaped one into the vagina, placing the cervix in the cup and passing the current for eight to ten minutes longer. Vaginal douches of carbolized hot water are used each day. The nurse or patient herself removes the vaginal and uterine packings before the administration of the douche, and the dressings are replaced by the physician. The patient is allowed moderate exercise, and her diet should be wholesome and nutritious. In regard to internal medication, keep the bowels active each day by the use of saline cathartics. Administer fluid extract of ergot in twenty-minim doses three times a day, and I frequently order Fowler's solution of arsenic in five-minim doses three times a day. Bromides of potash, soda, and ammonium are required if the patient is nervous and excitable.

Insist upon the patient entering the hospital or sanitarium whenever it is possible for her to do so, under the care and attention of trained attendants, securing good and nutritious food, with regular and sufficient sleep, freedom from the annoying happenings which will occur when she receives treatment at her home.

When the circulatory equilibrium has been established in the pelvic organs most of the sympathetic disorders present in other organs of the body will disappear.

MANUAL INTERFERENCE TO CORRECT CERTAIN UNDESIRABLE PRESENTATIONS.

By J. F. BALDWIN, M.D.,
COLUMBUS.

The introduction of anesthetics into general surgery, followed by that of asepsis, completely revolutionized the art and science of surgery. Obstetrics, so far at least as operative interference is concerned, clearly belongs to the surgical side of professional work, but it seems to me that obstetrical science has failed to take as full advantage of anesthesia and asepsis as has general surgery. Obstetrical cutting operations are unquestionably as nearly perfect as any other surgical procedures, but intrauterine manipulations are not, I think, resorted to as frequently and as boldly as they should be.

In 1873 the late John S. Parry, whose untimely death scientific obstetricians still mourn, read a paper before the Obstetrical Society of Philadelphia on "The Use of the Hand to Correct Unfavorable Presentations and Positions of the Head during Labor." This was a most scholarly and instructive paper, but it seems to have made little impression upon obstetrical art. If we look through the standard works of the day we find little or no reference to this method of treating occipito-posterior and mento-posterior positions.

Ramsbotham makes no mention of thus correcting occipito-posterior positions, and says of mento-posterior positions: "We cannot cause the head to turn, so as to approximate the chin to the chest, by pressure applied by the finger, nor can we, indeed, succeed in producing the same alteration by the introduction of the hand over the vertex."

Playfair makes no mention of this treatment of occipito-posterior positions, but says in regard to mento-posterior positions: "The older accoucheurs recommended either podalic version or the at-

tempt to convert the case into a vertex presentation by inserting the hand and bringing down the occiput. The latter plan was recommended by Baudelocque, and is even yet followed by some accoucheurs. Thus Dr. Hodge advises it in all cases in which face presentation is detected at the brim; but, although it might not have been attended with evil consequences in his experienced hands, it is certainly altogether unnecessary, and would infallibly lead to most serious results if generally adopted. It may, however, be allowable in certain cases in which the face remains above the brim and refuses to descend into the pelvic cavity. Even then it is questionable whether podalic version should not be preferred, as being easier of performance, giving, when once effected, a much more complete control over delivery, and being less painful to the mother."

Cazeaux and Tarnier state that "the head, placed in the right posterior occipito-iliac position, may, when once down in the excavation, depart from the chest, and the vertex presentation be thus spontaneously converted into one of the face, at the inferior strait; we witnessed a case of this kind at the Clinique in 1838." But these authors seem to have drawn no particular inference from their observation of this effect. In speaking of mento-posterior positions these authors describe the manipulations necessary to convert this presentation into a vertex-anterior position, but say that "this maneuvre will rarely prove successful." Nevertheless they recommend its attempt, with the hand if the face be above the superior strait, or with the forceps if the head be in the pelvis, before resorting to craniotomy.

In the *American System of Obstetrics* we are told that "should a *prudent* application of the forceps fail (in occipito-posterior positions)—and it constantly will fail—then the forceps must be abandoned," and "the next procedure is embryotomy." And in the same work, in speaking of mento-posterior positions, the author says "he can never indorse a treatment recently proposed which consists in placing the woman under complete anesthesia and then forcibly flexing the head, converting the impossible mento-posterior position of the face into the natural occipito-anterior position of the vertex."

Leishman does not mention manual reduction of mento-posterior positions, but advises that when the chin cannot be rotated forward

the perforator should be used. The editor, however, Dr. Parry, protests against this conclusion and refers to his own paper on this subject. This author also mentions the occurrence of extension in occipito-posterior positions as taking place by the efforts of Nature, but nowhere do I find that he advises an attempt to secure this by manual interference.

Barnes makes no mention of manual interference in occipito-posterior positions to secure extension. With regard to mento-posterior face presentations he says that this procedure "is violent; difficult, when not impossible, to carry out; likely to excite dangerous contractions of the uterus; extremely likely to favor the descent of the cord; and, above all, it is superfluous. . . . We conclude, then, that it is wiser not to attempt the restitution to a cranial position."

Parvin, in discussing face presentations, refers to Parry's case, but says such success when labor is thus far advanced must be altogether exceptional; and in speaking of occipito-posterior positions he mentions the occasional occurrence, if the fetal head be small, of cases of extension in the pelvis and the conversion of the occipito-posterior into mento-anterior positions, but he draws no conclusion therefrom.

Landis, in his work on *How to Use the Forceps*, makes no mention of this form of interference.

Reynolds, in his *Practical Midwifery*, does not mention this form of interference in occipito-posterior positions. In the treatment of chin-posterior positions, if high, he recommends an attempt at conversion into an anterior occiput by manual flexion, but no mention is made of this form of interference if the position be low.

Grandin and Jarman, in their work on *Obstetrical Surgery*, make mention of no form of manual interference in cases of face presentation with the chin turned posteriorly, except an attempt to rotate the chin anteriorly, and, when this fails, recommend that craniotomy should be done, or, in favorable cases, symphyseotomy. In occipito-posterior positions they mention the conversion into a face presentation, but recommend instead rotation of the fetus on its axis until the occiput is anterior.

It seems to me that the objections to manipulative interference, though voiced by the above-quoted authorities, are very largely traditional in character and have come down from a time when anes-

thesia was unknown and when the profession was familiar with the results, though unacquainted with their cause, of the introduction of the non-aseptic hand into the uterine cavity. Certainly, Playfair did not have complete anesthesia in mind when he preferred podalic version as "being less painful to the mother," nor could Barnes have had complete anesthesia in view when he characterized this form of interference as "violent" and "likely to excite dangerous contractions of the uterus." We now know that the introduction of the aseptic hand through the sterilized passages is entirely devoid of danger so far as septic infection is concerned.

Obstetricians who frequently resort to the use of chloroform carried to the surgical degree also know how completely relaxed become the abdominal muscles and the uterine walls. I think it is an invariable rule that when chloroform is given in the midst of strong uterine contractions, these contractions cease for a period varying from five or ten minutes to a half-hour or more. Cessation of the administration sometimes becomes necessary in order to allow these contractions to return. Intrauterine manipulations should always be made, therefore, during these few minutes when the uterus, surprised as it were by the anesthetic, has ceased to contract, and it is at this period that the entire uterine mass may be lifted above the pelvic brim and the necessary manipulations of the fetus be accomplished. In the language of Parry: "When the woman is entirely relaxed by the anesthetic it is very surprising what can be done by forcibly pushing the head upward. Not only does the child ascend, but if the lower portions of the uterus have been carried with the head into the cavity of the pelvis it may be lifted with its contents above the pelvic brim, when the latter becomes movable and easily manipulated. Both in the pregnant and unimpregnated woman the degree of stretching and movement of which the generative organs are capable when the patient is completely anesthetized appears very remarkable to one who has never employed this important agent in such cases." Parry's remarks, which were based on the use of ether, are even more true when chloroform is the anesthetic used, as chloroform produces greater muscular relaxation than ether.

In Parry's paper he urged the employment of the hand to facilitate delivery in two conditions: first, to transform occipito-posterior into occipito-anterior positions; second, to change presentations

of the face with the chin behind into those of the vertex with the occiput in front. Obstetricians seem to be quite of one mind that in occipito-posterior positions the attempt should be made to effect anterior rotation by pressure of the fingers upon the side of the head, and, as it is but a step from the introduction of the fingers for this purpose to the introduction of the whole hand, I have no doubt that the use of the hand for the transformation of the occipito-posterior into occipito-anterior position is very common ; the operator limiting his manipulations to the head, or perhaps extending them so as to include the fetal trunk, and thus, as suggested by Grandin and Jarman, securing rotation of the fetus on its axis until the occiput is anterior. I think, however, that few obstetricians are aware of the fact that in at least very many cases of mento-posterior position it is a very easy matter to convert this unfortunate presentation into the occipito-anterior, as recommended by Parry. Certain it is that in a recent issue of the *New York Journal of Gynecology and Obstetrics* Dr. Malcolm McLean reports a case in which he accomplished this conversion, as though the maneuvre were quite unique and original.

My first experience with this maneuvre was on May 16, 1883, when I happened to be down in Wheeling with the late Professor Landis. While there we were asked by Dr. James E. Reeves to assist him in a case, to which he had been called in consultation, of face presentation with the chin behind. The patient had been in labor for many hours and the head was thoroughly impacted in the pelvis. Dr. Reeves, Dr. Landis, and myself each used the forceps in an attempt to effect delivery, but only succeeded in more thoroughly impacting the head and shoulders. It was at this stage that I suggested to Dr. Landis the possibility of his flexing the head and thus securing a vertex presentation. Dr. Landis had written a book on *How to Use the Forceps*, and was thoroughly familiar with the literature of the authorities. He said at once that the maneuvre could not be accomplished, and, without making any serious attempt, yielded his place to me, when I succeeded with surprising ease in elevating the head, flexing it, and producing the desired vertex presentation. Although the presentation was now favorable, Dr. Landis, regarding the child as dead, at once perforated the skull in order to facilitate delivery, which was accomplished, though not without difficulty, with the aid of the forceps.

The woman was a primipara, of apparently about the average size, and had been in labor many hours. The child, notwithstanding the loss of blood and brain matter as the result of the craniotomy, weighed nearly eleven pounds. I firmly believe that had Dr. Landis been less familiar with obstetrical traditions he would have accomplished the conversion even more easily than did I.

Mento-posterior positions, when recognized early, can usually be converted without difficulty into mento-anterior, and since 1883 I have had but one other occasion to resort to the above-mentioned manipulation. In this case the child was of average size and the woman a multipara. The head was in the pelvis when I was called to the case, but under chloroform I easily elevated the head sufficiently to secure flexion, and delivery was promptly accomplished.

Mento-anterior positions, while looked upon with dread by some of the older obstetrical writers, are now known to be practically devoid of any danger to either mother or child, and present slight obstacles to a perhaps somewhat tedious delivery. If delivery be too long delayed, forceps may be easily used if deemed advisable. The chief objection to the presentation is in the unhandsome appearance of the babe when thus born. The mento-anterior position, then, being a not undesirable presentation, if we can convert the occipito-posterior position into this we have certainly accomplished much for the well-being of both mother and child.

August 22, 1888, I first attempted this manipulation and accomplished it easily. The woman was aged thirty-one years, in labor with her fourth child. She had been in labor three hours when I first saw her, and the head was in the pelvis with the occiput directly posterior. I endeavored in vain to secure rotation; I therefore, under chloroform, pushed up the head, assisted by a hand applied to the shoulder externally, and with comparatively little difficulty secured extension, and with the next pain allowed the head to again descend with the chin to the front. The child was a large one, and after waiting several hours for her to deliver herself I applied the forceps. In addition to the usual swollen condition of the features always found in face presentations, this child had a double harelip, so that when born it presented an appearance that was truly hideous. Since that time I have found it necessary to resort to this manipulation at least a half-dozen times, with only

one failure. This failure occurred August 16, 1895, while preparing this paper. The patient was a primipara, aged thirty-four years, and weighing between two hundred and fifty and three hundred pounds. She had been in hard labor thirty-two hours when I was called by my friend, Dr. Dixon, to assist in delivery. The child was large, weighing when born thirteen pounds, and I found it impossible to extend the head. I was able, however, to secure rotation of the entire fetus so as to convert the presentation into the occipito-anterior. I then left her, thinking she would be able to deliver herself, but after a further delay of four hours was again called, and I safely delivered her of a living child, with forceps. But for the large padding of fat, which not only interfered with the intrapelvic manipulations, but also prevented the external hand from affording much resistance, I am certain I would have succeeded in extending the head in this case.

As showing the ease with which these manipulations may be sometimes performed under chloroform relaxation, I will report the following case, which occurred during the writing of this paper: September 3, 1895, I was called to see a woman, aged twenty-five years, at full term with her second child. The presentation was occiput-posterior, and she had been in hard labor for five hours. The os was entirely dilated, and the waters had been discharged for some time. As the pains were powerful and frequent, and the woman in good condition, I watched the case for over an hour, trying to secure rotation of the occiput by the fingers applied to the side of the head. The attempt was, as I had anticipated, futile. I therefore gave her chloroform, and, introducing the hand, had no difficulty in elevating the fetal mass so as to secure extension. I then allowed the head to descend into the pelvis. As, however, the pains were still in abeyance, and to see if the maneuvre were entirely feasible under the circumstances, I again elevated the fetus, flexed the head, and then, passing the hand up alongside the head to the shoulder, without any difficulty rotated the entire mass so as to make the occipital presentation anterior. The head at once descended and labor was completed with the next two pains. The patient made an uninterrupted recovery.

In making these manipulations it is absolutely essential that the patient should be thoroughly anesthetized; she should be lying on her back, the hips well drawn to the edge of the bed, and the legs

supported by assistants. Whichever hand the operator can best use should be introduced, the other hand being applied externally to assist the internal hand. If there is not room in the pelvis the entire fetal mass should be lifted up above the brim by the hand placed against the presenting part. The fingers should then be worked along the side of the child's head until the occiput in the one case, or the chin in the other, can be caught and brought down ; being still held in this position, the presenting part should be allowed with the next pain to sink into the pelvis, after which delivery should be accomplished in the usual way.

Summary. First: when, in mento-posterior position, the chin fails to rotate to the front, before resorting to mutilation of the fetus or the Cesarean section, an earnest, well-directed effort should be made to convert the face presentation into the occipito-anterior position of the vertex. Second: in occipito-posterior positions in which rotation fails to be accomplished, a similar effort should be made to convert the occipito-posterior into a face presentation, mento-anterior. The required manipulations, if properly directed and under profound chloroform anesthesia, will rarely fail to accomplish the desired result.

SOME REFLECTIONS ON CONDITIONS AND METHODS FAVORING SUCCESS IN ABDOMINAL SURGERY.

By WALTER B. CHASE, M.D.,
BROOKLYN.

THERE are in all abdominal sections the undetermined factors, some of which will become apparent at the operation, some immediately subsequent to it, and others will elude the grasp of careful inquiry.

Why the shock in one case expends itself on the organs of circulation, inducing cardiac paralysis; in another on the excretory function, suspending the elimination of urea; or in a third by the arrest of respiration, is beyond the ken of the medical expert. While one patient escapes the risk of sepsis or peritonitis which from the standpoint of the careful observer seems imminent, and another falls a victim to it when the liability was apparently least, the fact that in one instance it is attributable either to the skill or want of skill of the operator, to heredity, to individual idiosyncrasy, or some other occult cause, is, after all, an admission of our ignorance. However, this very limitation of knowledge is no excuse or palliation for not making the most careful plans whereby the patient can be saved from unforeseen and undefinable disaster. The limitations and manifestations of vital force, as witnessed in functional and organic life, are seemingly as difficult of apprehension and understanding as the higher Power which launched them into being. The fact is never to be lost sight of that no one can be held responsible for conditions and circumstances over which he has no control. So, also, at its best, human judgment in matters which from their very nature are doubtful and problematical should not in justice be held as infallible. But in the realm of abdominal surgery so much is known or knowable that failure to obtain such facts as are open to the most searching investigation is little less than

criminal. For this reason success in abdominal surgery is not an accident, nor is it a fruit of sudden growth ; neither is it the forced and rapid development of a full-fledged specialist, born under the shadow of a medical college or set in motion by the act of a state examining board. With this class of practitioners their highest attainments do not antedate years of patient study and application, and their best records have not been mellowed by the discipline of failure and mistakes, nor strengthened by long periods of unremitting labor and patient observation. *Real success* in its highest manifestation is rather due to the harmonious blending of natural endowments, thorough scientific acquirements, and a patient and progressive cultivation of the practice of surgery. This means much. Some men, however superior their mental endowments, exceptional their opportunities, and ardent their desire for high attainments in this field, will fail because of natural unfitness for such a line of work. They may lack sound judgment of what it is wise to do or not to do, or be wanting in dexterity of manipulation : their technique is faulty, or they may not possess confidence in themselves to grapple with unseen difficulties or unsuspected complications, any of which might prove fatal to the undertaking. With this there must be such entire subordination of ambition to duty as will keep the surgeon on the high plane of right doing.

The conscienceless operator who prostitutes his exalted calling to base and selfish purposes that he may thereby add to his *clientèle* should be driven from the ranks of enlightened society. Human life is too precious to be trifled with, and the aspirant who lacks the judicial quality of mind which fits him to weigh the reasons *pro* and *con* should refrain from passing judgment on interests so sacred. This implies that the moral and judicial qualities must be in harmonious ascendancy.

Another vital qualification to the best work in abdominal surgery is a thorough mastery of normal anatomy and physiology, and an equally quick perception to recognize the changed relation of the structures in disease and their pathology. This involves the possession of such an exercise of the faculty of sound judgment and accurate observation as will enable its possessor to correct and modify his diagnosis at every step of an operation. This perfect equipoise of mind and capability of grappling with unsuspected conditions is one of the highest qualifications for successful work ;

and should he, from mistaken diagnosis, encounter a cyst of the cord instead of inguinal hernia, a hydrosalpinx supposed to have been an ovarian cyst, or tuberculosis within the area of the right iliac fossa instead of appendicitis, he will suffer no embarrassment and his patient no increased hazard.

Entire familiarity with the principles of modern surgical procedure and proficiency in technique is not enough, but with its possession there must be the conscious ability to apply and put in orderly operation all this knowledge. It is this combination of endowments and acquirements which makes the basis of the highest success. These qualities of head and heart have given us the McDowells and Simses, the honored founders of American gynecology, and the courage and patience of these ideal leaders should remain a perpetual inspiration to those who seek for new and higher attainments. Again, concentration of effort in one line of work, with freedom from "distracting care," is a powerful aid to proficiency. The worker who diffuses his efforts over the whole domain of medical and surgical practice must not expect the highest excellence in special lines of work. Among the many considerations which enter in as factors of success or failure in celiotomy, few will be mentioned. One of the most important is proper preparation of the patient, and, unless emergency forbids, it should *never be neglected.* If the health of the patient is seriously impaired from the condition requiring operation, from inability to take proper exercise, or from other coincident disease, effort should be made, hygienic or therapeutic, for its improvement. The state of the general health, the condition of the heart, kidneys, and nervous system, should be thoroughly investigated.

The question of renal sufficiency, as related to the average excretion of urea per diem, is of the highest importance. With such knowledge the surgeon will then be prepared to give intelligent advice not only as to the propriety of an operation, but to inform the patient or friends as to the probable risk to be encountered. Then, if failure follows, the danger will have been properly understood and the surgeon saved unavoidable censure; for in the presence of grave disease from which the patient will, if not relieved, necessarily become unfitted for duty, or perhaps perish, risk, both as regards the operation *per se* and the hazard incident to the use of anesthesia from disease of the heart, kidneys, or

other organs, and from shock, hemorrhage, peritonitis, or sepsis, is certainly justifiable, but to what extent it should be assumed will depend on the consent of the patient or friends and the judgment of the operator. Skill in selection of the anesthetic and its administration will receive due attention. The alimentary canal should be thoroughly empty at the time of a celiotomy. The power to inspire the confidence of the patient in the result of an operation adds much to the favorable issue. As a rule, when the patient is demoralized by fear and the need of interference is imperative, make the hour for operation the earliest practicable. Shock from fear is highly mischievous. The surroundings of the patient, the operating-room, the assistants, the nurses, the instruments, the dressings—in short, all that enters into the preparation for an operation, down to the minutest detail, demands the most careful preparation. Few things add more to the favorable outcome of an operation than the hearty and intelligent co-operation of assistants and nurses. This familiarity requires time and training, so that assistants or nurses shall be able to anticipate the wants of an operator, but it is worth all the time and effort it costs. Everything which shortens the period of anesthesia and the time of the operation itself, without the sacrifice of proper technique, should be studiously followed.

Nothing contributes more to such ends than thorough provision for every possible or remote emergency. How many patients have been sacrificed for the want of some special heart stimulant or the absence of a needful instrument or appliance. Facilities for quickly changing the position of the patient to or from the Trendelenburg position, or from one side to the other, should be the best. Nothing short of perfection, so far as attainable, in these details will satisfy the conscientious surgeon. The necessity for the strictest aseptic precautions is so universally recognized as to require no comment. As a rule, very little time should be required in entering the peritoneal cavity. The incision should be as short as possible, but long enough, so that valuable time and fruitless effort should not be sacrificed to needed room for rapid and easy manipulation.

If the subject is a woman always have the vagina sterilized, as emergency may arise which makes drainage through that channel indispensable, particularly so when gauze packing is required to

check oozing from raw surfaces unavoidably made by enucleation of large growths, or where free drainage is imperative from surfaces already septic. If possible, see that no raw surfaces are left intraperitoneal. Use absorbable material for intraperitoneal ligatures and sutures whenever admissible. If catgut is selected use dry or from alcohol. Great care should be exercised that it remain hygroscopic until its introduction into the living structure, for then absorption of fluids renders the ligatures tighter and thereby diminishes the liability to hemorrhage.

One important point should be remembered: never in tying catgut trust to a surgeon's or square knot, but tie again, or even two extra knots. This is needful to prevent, under some conditions, maceration of the ends of the ligature and consequent untying. Doubtless this fact has been misleading and has prejudiced many operators to discard its use, supposing failure resulted from inadequate tensile resistance, when in fact the ligature had untied. This untying is peculiarly liable when the free ends of the ligature chance to remain in the presence of serum or on mucus-secreting surfaces. It is usually safe to assume in plastic work, where there is only moderate tension on approximating structures, union will, if ever, take place before the catgut is absorbed, and if union is delayed silk will not remedy the defect. If silk is selected use the smallest size compatible with safety. Whatever form of needle is employed, see that it is no larger than is needed to safely penetrate the tissue and carry a thread large enough for safety, either as a ligature or suture; as far as possible, see that the suture material fills the opening made by the needle. Larger needles than necessity requires cause needless exposure of structure and induce avoidable hemorrhage. Great care should be exercised not to tie ligatures too tightly; they are more often too tight than too loose. The amount of pressure required to effectually close a bloodvessel, particularly when in direct contact with the whole circumference of the vessel and held in position by adjacent structures, is not very great. Special care is needful when the structures are soft and friable from disease. I recently witnessed an operation in which fatal secondary hemorrhage occurred from too tightly tying the ovarian artery. As a rule, unless position and gravity are greatly in your favor, do not be too certain that you can cleanse the peritoneal cavity by irrigation. If septic material escapes from some

isolated surface or cavity during an operation, better trust a skilled assistant to remove it by the use of heavy gauze sponges. Otherwise a liability to scatter the poison to new locations more than balances the advantage obtained. If diffused septic conditions of the peritoneum are already present, much may be accomplished by thorough irrigation and proper drainage. There is no necessity in the toilet of the peritoneum to remove every drop of blood or serum. Its capacity for disposing of not only these, but some germs, is well recognized. It is safe practice not to resort to antiseptics or germicides within the peritoneal cavity, the exception being the sponging of limited areas which are likely to prove the foci of new disturbances. The question of drainage is one of transcending importance. It should never be resorted to except for very substantial reasons, and is to be dispensed with at the earliest possible moment. In certain conditions drainage is imperative, and without it the chances of recovery would be *nil*. The doubtful cases are the puzzling ones. This question must be determined by the judgment of the surgeon on the merits of the individual case. Material for drainage will vary with the several indications present and the preference of the operator. It may consist of glass, rubber, or gauze. If gauze, one precaution should always be taken, viz., to turn in or stitch over the cut edges of the gauze, so that shreds of cloth or ravellings shall not become detached or left within cavities which are about closing. If deemed best to fill any considerable cavity from above downward with gauze, there is often an advantage in using the Mikulicz drain, on account of the greater ease of removal. Under other conditions candle-wicking is superior. Its removal is likely to be much easier, for it can be separated by piecemeal, and is thereby less likely to disturb adhesions or cause hemorrhage. When circumstances will admit, experience amply proves that through-and-through drainage has manifest advantages. It should never be forgotten that every contact made with raw surfaces, particularly the peritoneal, results in shock and to a degree lowers the vital resistance of these structures; consequently undue manipulations should be scrupulously avoided.

The method of closing the abdominal wall varies with the preference and experience of the individual surgeon. Either method, by layer or *en masse*, shows entirely satisfactory results. Certainly more time and skill are required in approximating the distinct

structures of the abdominal wall. Serious objection rests against buried, unabsorbable sutures, for their liability to cause subsequent trouble does not compensate for the added risk. Better close the wall *en masse*, and for this nothing can be better than silkworm-gut. As to after-treatment, hot water to quiet gastric irritability and thirst, and an early movement of the bowels as is permissible with increased peristalsis, meet the indications in most uncomplicated cases.

Ample time for the thorough recovery of the abdominal wound is, for every consideration, wise and economical. While proper regard should be had for the views of others, if the weight of personal observation and experience is ignored, the chances are that one's own train of reasoning will become illogical and deceptive and his methods vacillating and untrustworthy.

Franklin Townsend Jr.

IN MEMORIAM.

FRANKLIN TOWNSEND, JR., M.D.,

ALBANY.

BY A. VANDER VEER, M.D.,
ALBANY.

IN the performance of the duty that devolves upon me, as an intimate associate of Dr. Townsend, I find it difficult to express in words the meed of recognition that is his due.

His life of professional work was not long—as we measure the lives of some of our brother physicians—but his faithful service, while in full practice, was so abundant of good results, his duties accomplished so thoroughly, that it becomes a task of affection, a tribute of love, to place on record, even though it be in a modest way like this, our just appreciation of Dr. Townsend as a fellow-worker.

He died at his family residence, No. 2 Park Place, Albany, N. Y., October 31, 1895, after an illness extending over a period of nearly two years. It may be truly said of him that in a comparatively brief career he attained the highest rank in his profession.

He was a born physician, combining the ability and skill of the healer with the tender and loving ministrations of the nurse. In the sick-room his sunny and sympathetic nature was a benediction, and brought cheer and hope to many a weary sufferer. His sufferings during the many months which were gradually losing his hold on life were borne with heroic fortitude and courage. Never complaining and considerate only for those whose sad privilege it was to minister to him, he gently passed away.

Dr. Townsend was the youngest son of General Franklin and the late Anna King Townsend, and was born in Albany, N. Y., November 4, 1854. He received his preliminary education at the

experimental department of the State Normal School and later at the Albany Academy. After completing the course at the latter institution, he entered Williams College at the close of the sophomore year in 1871, graduating in 1873. His medical education was obtained at the College of Physicians and Surgeons in New York, and as a result of a competitive examination received the appointment of Resident Physician at the Charity Hospital on Blackwell's Island. After taking courses at Vienna, Strasburg, and London, he began the practice of his profession in Albany in 1878, and continued the same until within eighteen months, when failing health compelled him to relinquish it. In 1880 he was elected Lecturer on Physiology in the Medical College of this city, and in the following year was made Professor in the same branch. In 1892 his resignation was regretfully accepted, and he was further honored by being made Emeritus Professor. The degree of A. M. was conferred on him by Union University. He was an Ex-president of the Albany County Medical Society, member of the New York State Medical Society, American Association of Obstetricians and Gynecologists, and Fellow of the British Gynecological Society; was Visiting Physician to the orphan asylums of this city, Consulting Physician to the Albany Hospital, and Visiting Physician to St. Peter's Hospital.

He married, November 8, 1877, Margaret Whiting, only daughter of the late Judge John H. Reynolds, who with two sons, aged sixteen and eleven years, survive him.

At a special meeting of the Faculty of the Albany Medical College, held October 31st, the following memorial minute, presented by a committee consisting of Drs. S. B. Ward, H. Hun, and A. Vander Veer, was ordered entered upon the minutes, transmitted to the family of the late Dr. Townsend, and printed in the daily papers of the city :

" Dr. Franklin Townsend, Jr., son of General Franklin Townsend, formerly Adjutant-General of the State of New York, was born in Albany, November 4, 1854. Receiving his preliminary education in the private schools of his native city, he pursued the full course at Williams College, where he graduated with creditable standing in his class in 1873. In 1876 he received his diploma as Doctor of Medicine from the College of Physicians and Surgeons in New York City, and, passing a successful exam-

ination, received the appointment of interne at the Charity Hospital. The following year he married Miss Margaret Reynolds, the only daughter of John H. Reynolds, one of the most talented and successful lawyers who has ever graced the bar of this State. Continuing his medical studies for a year in Europe, he returned to this city, and commenced the practice of the profession to which he was devotedly attached. In 1880 he was elected Lecturer on Physiology in this College, and in the following year he was made Professor in the same branch, in which position he continued until his resignation was regretfully accepted in 1892. The announcement of his death this morning has filled us with sorrow and sadness.

"Let us spread upon our minutes a few words which but feebly express our appreciation of him whose memory we shall ever hold in respect for the good work that he did as professor in this institution. Dr. Townsend was a man of well-recognized power as a teacher in his department; he was thoroughly exhaustive in his lectures; he was respected, admired, and beloved by the students who came under his instruction. Whenever we meet them—some now well advanced in the practice of their profession—they mention his name with admiration and profound respect. He was a gentleman in the truest sense of the word. There were but few men in the medical profession who lived up in a more honorable manner to the honest interpretation of the ethics of our practice in the treatment of his professional brethren. It pained and distressed him to give heart-burnings to anyone with whom he came in contact. He was ever ready to extend a hand of assistance to younger members of the profession.

"We will remember him for his virtues and for his good work in his chosen profession. We shall ever respect and hold in admiration the work he accomplished in this institution and in the hospitals of this city. We earnestly mourn his early death, and we desire to extend to his family our full sympathy in this their hour of sorrow and affliction.

"A. Vander Veer, *Chairman.*

"W. G. Tucker, *Registrar.*"

At a special meeting of the Albany County Medical Society, held in Alumni Hall, Friday evening, November 1, 1895, to take

action on the death of Dr. Franklin Townsend, Jr., the following resolutions were unanimously adopted :

" WHEREAS, The news of Dr. Townsend's death has come to this Society with a suddenness almost startling, they having anxiously hoped for his restoration to health and activity; and,

" WHEREAS, By his death the society recognizes a loss to its membership almost irreparable, not only by reason of his many virtues of heart and mind, but as well as his commanding skill as a physician and his signal ability as an executive officer; therefore, be it

" *Resolved*, That while the members most sincerely sympathize with his family and his friends in the severe loss they have sustained, they still gratefully remember that many years of Dr. Townsend's life were spent in the exercise of one of the best and highest of human pursuits, and that his career was distinguished by notable skill, broad philanthropy, and by honest and successful endeavors to uphold and advance the usefulness and dignity of his profession.

" *Resolved*, That these resolutions be spread on the minutes of our society, and a copy thereof transmitted to the family of the deceased.

" J. P. BOYD,
" J. D. CRAIG,
" C. E. BLAIR,
" J. V. HENNESSY,
" T. K. PERRY,
"Committee."

Dr. Townsend was one of the most loyal Fellows of this Association. His contributions were of the best—original in thought, concise in expression, thoroughly abreast of the foremost thinkers and workers in his profession. In his manner he was a genial, lovable companion, the friend of all in a gentlemanly, earnest manner, and forceful when expressing his sense of right. The enemy of none, he was beloved by all who came in contact with him and with whom he became well acquainted. Wherever his duty called him, either in professional walks, social or literary circles, his presence was felt and his opinion was for good, upright, honest, honorable motives. He was a very observant, excellent,

and close student. He could not tolerate fads or superficial work. Whenever pursuing any line of investigation, in bringing out his original papers, his work was done in the most honest, fair manner possible. His character was forceful, his nature affectionate, and he made many, many friends both in and out of his profession. We have lost one of our best, one of our most faithful Fellows in the desire to see this Association successful. We shall miss him greatly, and our only comfort is that we must continue to do that line of work he always prophesied for us. Let us reverence his memory in carrying out his desires of faithful, earnest, original observations, concisely recorded, and reported in clinical reports and studied papers.

JACOB EDWIN MICHAEL, M.D.,

BALTIMORE.

By GEORGE HENRY ROHÉ, M.D.,

CATONSVILLE.

Dr. Jacob Edwin Michael was born in Harford County, Maryland, on May 13, 1848. His early education was obtained at St. Timothy's Hall, Catonsville, a famous Maryand school of ante-bellum days. He graduated from Princeton College in 1871, and immediately began the study of medicine, receiving the degree of M.D. from the University of Maryland in 1873. After graduating in medicine he devoted a year to study in Europe, spending most of the time at Würzburg and Vienna. Returning to Baltimore in 1874, he was immediately elected to the position of Demonstrator of Anatomy in his *alma mater*. In 1880 he was advanced to the chair of Anatomy and Clinical Surgery, and after ably filling this position for ten years he was transferred to the chair of Obstetrics, which he held until his death on December 7, 1895.

Nature had endowed Dr. Michael with a magnificent physique. As an athlete he was distinguished in a school renowned for its heroes of muscle. Until he was prostrated by his fatal illness he always took great interest in athletic exercises, and took part in many of the annual "events" calling for the display of great muscular strength.

Dr. Michael possessed intellectual attainments of a high order. Gifted with an accurate memory and a logical mind, he acquired knowledge at little cost of labor. As a lecturer in college, or as a debater in medical societies, his expositions were exceedingly luminous. His language was exact and definite, the arrangement of his subject logical, his speech clear and distinct, without rhetorical flourish or ornament.

Among his friends Dr. Michael was a prime favorite. Negligent of the quality of tact, perhaps deficient in it; scorning all

J. Edwin Michael M.D.

Baltimore

1895.

policy and deception, he made enemies of men of narrow minds. Those, however, who knew his worth, his sincerity, his love of truth, and his hatred of shams, appreciated his qualities at their true value. There was nothing small about him. He was large in body and broad in mind.

Dr. Michael was proud of his profession. He was a believer in organization. He was a member of all the local medical societies of Baltimore and of the Medical and Chirurgical Faculty of Maryland, of which body he was the President at the time of his death. He was also a member of the American Association of Obstetricians and Gynecologists, of the Southern Surgical and Gynecological Association, of the American Surgical Society, and of the American Medical Association.

His contributions to medical literature have been principally in the line of surgical and obstetrical activity. The latest product of his pen was, I believe, the terse paper on "Obstetrical Antisepsis," published in the TRANSACTIONS of this Association for 1894.

THOMAS KEITH, M.D., F.R.C.S. Ed., LL.D., F.R.S. Ed.

By LEITH NAPIER, F.R.S. Ed.,[1]
LONDON.

Thomas Keith, of Edinburgh (for, although he came to reside in London in 1888, Edinburgh which trained him, and where his best work was done, and his fame established, may justly claim him as her own), died at his house in London on October 9, 1895.

Sketches of his life have already appeared in most of the English medical papers. All agree in awarding to him the highest praise a medical man can earn, viz., that he was devoted to his professional work and that he proved his capability to succeed in anything he undertook. His history has a pathos which, if not unique, is happily rare. From early youth he was frequently an invalid, and yet his courage, perseverance, and enthusiasm were so great that he accomplished work of which any surgeon might well be proud.

Thomas Keith was born at St. Cyrus, Kincardineshire, N. B., in May, 1827. Both his father and grandfather were clergymen; the former wrote a remarkable and popular book on "Prophecy," which ran through several editions. Thomas Keith had six brothers, three of whom, like himself, studied for the medical profession. His elder brother, Dr. George S. Keith, of Edinburgh, has quite recently published a book which is characterized by clearness of argument and vigorous diction.

Dr. Keith received the earlier part of his education at the parish school, as then usual, and afterward at the Grammar School and University of Aberdeen. His medical education was obtained entirely in Edinburgh. Keith was almost the last apprentice to a medical man in Edinburgh, and the master, Sir James Simpson,

[1] Specially contributed to this volume by request.—Editor.

THOMAS KEITH.

was worthy of his pupil. The apprenticeship was entered on in 1845, and three years later Keith passed his examinations and graduated as M.D. of Edinburgh University. After graduation he was appointed by the late Professor Syme as his Resident House Surgeon in the old Royal Infirmary. Syme thought highly of young Keith and predicted that his surgical career would be a distinguished one.

In 1849 Keith's precarious health impelled him to try residence in a more genial climate than that of the east-windy "Modern Athens," and, having received the appointment as Surgeon to the British Embassy at Turin, he went to reside in Italy. He remained there about two years, and during his stay seems to have become somewhat unpopular with some of the Italian physicians in consequence of his outspoken criticisms on the abuse of blood-letting, then so prevalent.

In 1851 he, now improved in health, returned to Edinburgh, where he entered into partnership with his brother, Dr. George Keith, whom we have already mentioned. From the beginning of his career he paid special attention to surgery, especially aural surgery, in which department he gained considerable repute; at the same time he did not neglect the general practice which came in his way, and was well esteemed as an accoucheur. Gradually he evolved as a gynecologist, the first to appear in this specialty in Scotland; and, after contenting himself for a time with the minor surgery of this department, performed his first ovariotomy in 1862. His is thus another instance of the often-observed fact that, given the capability in the man, the occasion for exercising it will almost certainly come. Seventeen years after his graduation he began the great work of his life which made his name of world-wide renown and deservedly throws a lustre on the school that trained him and on the specialty he adopted.

Clay, of Manchester, who died only a short time ago, and Spencer Wells, of London, who yet remains as the *doyen* of his branch, not only in England, but in Europe, had, it is true, paved the way for Keith. Baker Brown, of London, did the first successful ovariotomy in Scotland, having operated in Aberdeen a short time before Keith's first experience; Keith's was thus the second successful case. The surgeons of Edinburgh stood aghast at the temerity of the man who dared to cut and handle the abdominal perito-

neum! Threats of interference and of prosecution for manslaughter if his patients did not recover were made in vain. Keith worked quietly on, and soon stood first as the most successful ovariotomist in Britain of that early period of gynecological surgery. People asked what is the secret of his success? Why do his patients recover when those of Professor This or Mr. That all die? His detractors said the results of his first fifty cases were accidental, but when he published his first hundred cases "his success so far overtopped that of all other surgeons that it became a wonder and the admiration of surgeons all over the world" (Marion Sims). And at a later date his success in abdominal hysterectomy for uterine fibromyoma was equally a puzzle to those who did not know the man and his methods.

Much of his best work was carried out in his private hospital in Great Stuart Street, which he established in 1866.

He had been offered beds in the old Royal Infirmary in 1870, but could not see his way to operating there conscientiously. When the present Royal Infirmary was opened in 1879 he became *de facto* Extra Surgeon for Ovarian Disease there; he had been *de jure* in possession of the office for nine years.

When he first performed ovariotomy, Keith, following the then prevalent fashion, secured the pedicle by means of the clamp; he found this unsatisfactory and adopted the cautery, which he employed after everyone else had discarded it, and to which he attributed (erroneously, as we think) a good deal of his success. His success was really due to the constant personal attention to details which he displayed, not only at the operation, but during the whole after-treatment of the case. Nothing was too unimportant to pass over lightly, no trouble was counted as such if it contributed to the recovery of his patients.

His diagnostic power was great, partly doubtless from constant exercise of it, but in no small measure from what seemed to be intuitive perception; his judgment was seldom wrong.

Keith was a highly strung, nervous man; but combined with these conditions, as is not infrequent, he had the coolest courage and the most perfect patience under the most trying and unexpected circumstances. He was a man of few words, and was rather inclined to despondency in his prognosis regarding a case; but although in spite of his frequent moods of melancholic silence, his

patients felt the most thorough confidence in his ability to pull them through; and it is hardly an exaggeration to say that many of them almost worshipped him.

In a fragile body he had a strong, clear mind; his gentleness of manner was inherent to the man; his strength of courage and boldness in expressing his opinions one way or the other were parts of himself. Fixity of purpose, sympathy, and personal kindness were his essential characteristics. He was a combination of the philosophic dreamer and the restless methodical man. With no special case to occupy him he seemed often lost in cloudland, but when he was made to descend to mundane matters nothing concerning the points of a case or the true interest of his patient seemed to escape his attention.

In seeking to determine Keith's place as a pioneer in abdominal surgery, it would be difficult to speak frankly without making comparisons with men who have operated under conditions similar to his. This much may be said, that fifteen years have passed since the super-excellence of his work was warmly dwelt on by the late Marion Sims, who, from his own experience and great capability, was well fitted to appreciate so sterling a worker as Tom Keith. Sims, after showing that the idea that Keith was a slow operator was erroneous, "for I have never seen anyone cut down to the peritoneal cavity more quickly, though always cautiously, remove a tumor with greater celerity, or close up the external wound more rapidly," he goes on to say: "The time he dallies is when he comes to arrest hemorrhage by ligaturing bleeding points and cleansing out the peritoneal cavity. When the operation is finished, you ask yourself, Could it possibly have been done better? and the answer comes spontaneously, Impossible." With this verdict those of us who have seen Keith at work unhesitatingly agree.

Another point worthy of remark is that even at his zenith of popularity he never operated unless he had good reason for doing so. It was never alleged against him that he operated unnecessarily; he had the moral courage to refuse to intervene unless he was personally convinced that no less radical measure would cure the patient; on one occasion he travelled from Edinburgh to the United States on purpose to remove a tumor, and because he deemed that the opeation would expose the patient to needless risk came back again without operating. He was, however, more judi-

cious than some of our reactionaries of today, for he did not shrink from a severe and hazardous operation if he felt that by this means he could relieve intolerable suffering, or even for a time prolong life.

Later in his career he became persuaded of the value of electricity in the treatment of uterine fibro-myomata, and was the principal exponent in England of Apostoli's method of treatment. But he afterward in some measure retracted the belief he had expressed, that the battery should replace the knife, and it is an evidence of his constant care for the well-being of his patients that the last operation, but one, he performed was a hysterectomy for a uterine fibroid, in which electricity had failed.

Dr. Keith was not a prolific writer; whatever he did publish was evidently written after considerable thought, and with a view to placing facts rather than theories before the profession. He published papers on ovariotomy in the *Edinburgh Medical Journal* in 1863 and 1864; and later some papers in the *British Medical Journal*, which formed the basis of the first part of his well-known work, *Contributions to the Surgical Treatment of Tumors of the Abdomen*, Part I., Hysterectomy. This appeared in 1885. The succeeding volume, Part II., *Electricity in the Treatment of Uterine Tumor*, was written jointly with his son, Mr. Skene Keith, and was published in 1889.

In appearance Dr. Keith was a tallish, thin man, with stooping figure; he had a high, broad forehead, and a thin, ascetic, careworn face, in which one could read firm purpose with gentle sympathy.

The world has lost an honorable, straightforward, capable surgeon, who, handicapped all his life with feeble health, made a grand and noble use of the possibilities of his life, and whose fame as an operator will live long in the history of gynecology.

L. CH. BOISLINIÈRE.

L. CH. BOISLINIERE, A.M., M.D., LL.D.,

ST. LOUIS.

By FRANK A. GLASGOW, A.B., M.D.,[1]

ST. LOUIS.

The subject of this sketch, Louis Charles Cherot-Boislinière, was born in the Island of Guadeloupe, one of the West Indian possessions of France, on September 2, 1816. His family were wealthy landholders, and conducted large sugar plantations in that tropical island. Following the custom of the times, he was, at an early age taken to France to continue and complete his education.

After a thorough grounding in the elements by private tutors, he entered the University of France, where he took his degree in letters and arts. He then began the study of law in the same university, and in due course of time received the degree and license to practice in the French Courts. About this time there was held a competitive examination among the licentiates of law for the purpose of elevating one of their number to a vacant professorship. This position was for life, and Mr. Boislinière secured the prize.

Owing to the unsettled condition of his native island, on account of the emancipation of the negroes, he resigned his right to the professorship in favor of the candidate next in excellence, and returned to Guadeloupe. Having arranged his affairs at home, he made an extended tour through South America, verifying the observations of von Humboldt. He had previously learned the Spanish language, having for a long time had in view this voyage to South America. Returning again to his native island he found things in such an unsettled condition, and knowing full well that it offered no future for him, he decided to make his future home in the United States. He reached New Orleans in 1842, having the intention of practising law. Finding, however, that a thorough

[1] Dr. Glasgow was a devoted friend and pupil of Dr. Boislinière.

knowledge of the English language was necessary to success even in that French community, he set out for Kentucky, bearing letters to Henry Clay and other distinguished citizens. While residing in Kentucky he decided to take up the study of medicine, a profession he was eminently fitted for by his thorough classical, legal, and scientific training.

In Louisville he married Mary Hite, the daughter of Stephen and Martha Aubrey Pendleton Hite.

He entered the Medical College at Louisville under such eminent teachers as Gross and Flint, and the elder Yandall. He completed his medical studies, however, at the St. Louis Medical College in 1848, having been persuaded to go to St. Louis by Doctor Bullet, who had been appointed to a professorship in the St. Louis Medical College, which was then the medical department of the St. Louis University. He entered immediately the active practice of his profession and did yeoman service during the cholera epidemic of 1849.

In 1858 he was elected coroner of the City and County of St. Louis, and was re-elected in 1860. He was the first physician who had ever held that office, which he found in a chaotic condition. He had special laws passed governing the office, which were declared constitutional by the Supreme Court of the State, and which have guided all subsequent coroners in the conduct of their affairs. The position has, since his election, always been held by a physician.

He turned his attention to obstetrics and gynecology, and soon became identified with the practice of these branches, conducting at the same time a large general practice. He induced the Sisters of Charity to open a lying-in institution in St. Louis. This institution, under the name of St. Anne's Asylum, was the first institution of the kind west of the Alleghenies. For more than twenty years he was the attending obstetrician. The asylum is today in a flourishing condition.

In 1870 he was called to the Chair of Obstetrics, Gynecology, and Diseases of Children in the St. Louis Medical College. In connection with this chair he conducted a large gynecological clinic at the St. Louis Mullanphy Hospital. In 1878 and again in 1879 he was elected President of the St. Louis Medical Society. He was several times elected President of the St. Louis Obstetrical and Gynecological Society. In 1879 he received the degree of LL.D. from the St. Louis University. On account of certain scientific

communications he was elected an honorary member of the Anthropological Society of Paris. At its meeting in St. Louis of the American Association of Obstetricians and Gynecologists he had the honor of delivering the welcoming address and of receiving an honorary fellowship in that society.

He was noted for his great learning, the result of a life of active industry and profound and continuous study. In the midst of his professional duties he somehow found time to keep up his classical and literary studies and took an active interest in the questions of the day. His kindly courtesy and the personal interest he took in each member of the profession endeared him to them all.

As an obstetrician he was aggressive and bold, but at the same time prudent and conservative. He was the pioneer of the obstetric forceps in the West, and fought its battle against what seemed insurmountable opposition until the victory was complete, and that great "prime mover of obstetrics and conservator of infantile life" is found in the obstetric bag of every practitioner. In the early days of this controversy his greatest opponent was the most famous obstetrician in the city, who contended that delivery at the superior strait by means of the forceps was a physical impossibility; but, when its possibility was demonstrated beyond a doubt, retreated with the statement that "it was a most hazardous and altogether unwarrantable proceeding."

Another stand taken by Doctor Boislinière early in his medical career was the ethical wrong and unscientific proceeding of craniotomy upon the living child.

In all his obstetric experience, covering as it did some forty-five years of active obstetric work, both in private practice and hospital service, not once was craniotomy upon the living child resorted to. He defended this position against all comers, ably assisted and encouraged by his friend and colleague, Doctor T. L. Papin, of St. Louis. In 1890 he published a pamphlet entitled *Craniotomy and Cesarean Section*, in which the ethical wrong was clearly proved, and the operation of craniotomy demonstrated to be unsurgical and scientifically inexpedient and inhuman.

His life-long battle against the useless sacrifice of human life was, owing to the advance of modern surgery, crowned with success, and he had the satisfaction of knowing that the operation of craniotomy was relegated to the past.

He contributed a great many articles to medical literature. He was active in the debates of the medical societies of which he was a member, the transactions of which show the deep interest he took in everything that pertained to medicine.

For some time before his death he was busily engaged upon the crowning work of his life, namely, *A Treatise upon Obstetric Accidents, Emergencies, and Operations.* Embracing as it does an obstetric experience of nearly fifty years, the work is practical, scientific, and eminently fitted for use of physician and student. It was in press (Saunders & Co., Philadelphia) at the time of his death, but it is now before the public. It has been accepted as a text-book in many medical colleges, and has received a cordial reception by the medical profession at large.

Doctor Boislinière died on January 13, 1896. His wife and six children survive him, five daughters and a son—Dr. L. C. Boislinière, Jr. Although he had passed his eightieth birthday he was active to the last; never having relinquished his practice, he had the satisfaction of "dying in the harness."

INDEX.

Abdominal nephrectomy, 230
surgery, 376
some anomalies found in, 285
Adhesions, intraperitoneal, 115
Appendicitis, 330
Armstrong, Oscar Samuel, 17
Asdale, William James, 17
Auld, John, 59

Bacon, Joseph Barnes, 17
Baker, Washington Hopkins, 17
Baldwin, James Fairchild, 17, 57, 220, 368
Banta, Rollin Ledrue, 17
Barrow, David, 17
Bernardy, Eugene Prosper, 18
Biliary ducts, obstruction of, 254
Blood-clot in a case of ruptured ectopic pregnancy, 96
Blume, Frederick, 18, 90, 175
Bond, Young Hance, 18
Boise, Eugene, 18, 342
Boyd, James Peter, 18
Branham, Joseph H., 18
Brown, John Young, Jr., 18
Byford, Henry T., 112, 113
By-laws, 5

Cameron, Irving Heward, 18
Chase, Walter Benajah, 18, 376
Carstens, J. Henry, 18, 47, 89, 112, 114, 151, 162, 164, 227, 228, 237, 283
Cheesman, William Sanderson, 19
Clarke, Augustus Peck, 19, 366
Conklin, William Judkins, 19
Conservatism in gynecology, 320
Constitution, 3
Cordier, Albert Hawes, 19, 60, 88, 113, 119, 126, 159, 160, 197
Corresponding Fellows, 15
Craniotomy, limitations of, 239

Crofford, Thomas Jefferson, 19
Curette, uterine, use and abuse of, 275
Cushing, Clinton, 19
Cushing, Ernest Watson, 19
Cyst, hydronephrotic, 220

Davega, S. M., 20
Davis, William Elias B., 20, 76, 77, 102, 127, 254, 273
Dewees, William Busby, 20, 362
Dorsett, Walter Blackburn, 20, 275, 283, 312, 313
Douglas, Richard, 20
Duff, John Milton, 20
Dunlap, Fayette, 20
Dunn, James Henry, 21
Dunn, B. Sherwood, 21, 85, 154, 158, 159, 160, 161, 162, 163, 237
Dunning, Lehman Herbert, 21, 107, 112, 114, 128, 235

Earle, Frank Breckinridge, 21
Eastman, Joseph, 151
Eclampsia gravidarum, 175, 181
Ectopic pregnancy, ruptured, 96
Endometritis, post-climacteric, 314

Ferguson, Alexander Hugh, 21, 60, 272, 292
Fish, Edmund Frost, 21, 87
Frederick, Carlton Cassius, 21, 57, 83, 194, 351

Gall-bladder, surgery, 250
Gibbons, Henry, Jr., 21
Gilliam David Tod, 21
Glasgow, Frank Adams, 21, 395
Goldspohn, Albert, 22, 122, 281
Griffith, Jefferson Davis, 22
Glycerin, intrauterine injections of, 294
Gynecology as a specialty, 303
    conservatism in, 320

Haggard, William David, 22
Hall, Rufus Bartlett, 22, 102, 163, 169, 222, 228, 229 237, 248, 269
Hayd, Herman Emilie, 22, 78, 118, 161, 193, 226, 227, 230, 235, 237
Haynes, John Rudolph, 22
Henrotin, Fernand, 164, 169
Hoffman, Joseph, 22
Holmes, Bayard, 22
Holmes, Josus Billington Sanders, 22
Honorary Fellows, 11

Howell, Stephen Yates, 23
Howitt, Henry, 23
Hughes, Donnel, 23
Hulbert, George Frederick, 23
Hydronephrotic cyst, 230
Hyperplastic conditions of uterus, treatment of, 364
Hypes, Benjamin Murray, 23, 163, 227, 236, 294

Ill, Edward Joseph, 23, 132, 283
Induction of labor, 294
Indications for operation in puerperal sepsis, 71
In memoriam, 383
Insanity, puerperal eclampsia in its relation to, 189
Intermediate treatment of puerperal sepsis, 62
Interstitial pregnancy, ruptured, 107
Intra-abdominal tumors, 197
-peritoneal adhesions, 115
Intrauterine injections of glycerin, 294

Jayne, Walter Addison, 23
Jarvis, George Cyprian, 23
Jelks, James Thomas, 23
Jennings, Charles Godwin, 24
Johnston, George Ben, 24
Jones, William B., 221, 228, 312

Kraurosis vulvæ, 306
Krieger, G. E., 89
Krug, Florian, 24

Labor, induction of, 294
Laidley, Leonidas Hamlin, 24, 271
Lanphear, Emory, 113 191
Lateral displacements of uterus, 132
Limitations of craniotomy, 239
Long, John Wesley, 24
Longyear, Howard Williams, 24, 59, 81, 99, 120, 141, 181, 195, 227, 260, 282, 292, 293, 306, 313
Lothrop, Thomas, 24

Macdonald, Willis Goss, 25, 57, 59, 130, 160, 161, 167, 203
McArdle, Thomas Eugene, 25
McCool, Hugh, 25
McGuire, Edward, 25
McMurtry, Lewis Samuel, 25, 71, 77, 92, 152, 158
Manton, Walter Porter, 25, 80, 189, 195

Manual interference to correct certain undesirable presentations, 368
Maxwell, Thomas Jefferson, 26, 104, 129, 247, 273, 285
Miller, Aaron Benjamin, 26, 62, 91, 228
Meyer, Joseph, 26
Minutes of eighth annual meeting, 35
Morris, Robert Tuttle, 26
Moses, Gratz Ashe, 26
Murphy, John Benjamin, 26, 124, 127, 172, 261, 263
Myers, William Herschel, 26, 82, 239, 248, 273

Napier, Leith, 390
Nevitt, R. Barrington, 26
Nephrectomy, abdominal, 230
Neurasthenia accompanying and simulating pelvic disease, 351

Obituary notice of L. Ch. Boislinière, 395
of Thomas Keith, 390
of Jacob Edwin Michael, 388
of Franklin Townsend, Jr., 383
Obstruction of biliary ducts, 254
Officers for 1895–96, 9
Ordinary Fellows, 17
Ovarian tumor, 230

Paine, John Fannin Young, 27
Parotitis, suppurating bilateral, 52
Parturial sepsis, 362
Pearson, William Libbey, 27
Peck, George Sherman, 27
Pelvic disease, 351
inflammation in women, 222
suppuration, relation of, to structural changes that may occur in the Fallopian tube, 356
Pelvis, suppurative disease of, 142
Peterson, Reuben, 27
Pneumo-peritoneum, 204
Porter, William, Jr., 27
Post-climacteric endometritis, 314
Potter, William Warren, 27, 78
Praeger, E. Arnold, 27, 320
Presentations, undesirable, 368
President's address, 47
Price, Joseph, 27
Prophylactic treatment of eclampsia gravidarum, 181
Puerperal eclampsia in its relation to insanity, 189
sepsis, treatment of, 62, 71

Reed, Charles Alfred Lee, 28
Retroversions of uterus, 342
Ricketts, Edwin, 28, 57, 77, 101, 104, 163, 246, 250
Robinson, Byron, 112, 121
Robinson, William Lovaille, 28
Rohé, George Henry, 28, 388
Rosenwasser, Marcus, 28, 96, 105
Ross, James Frederick William, 28, 53, 60, 84, 99, 104, 159, 170, 204, 267
Ruptured ectopic pregnancy, 96
interstitial pregnancy, 107

Sellman, William Alfred Belt, 29, 364
Sepsis, parturial, 362
Sexton, John Chase, 29, 314
Seymour, William Wotkyns, 29, 234, 236, 263
Societies, special use of, 47
Smith, Charles North, 29
Stanton, Byron, 29
Steele, Daniel Atkinson King, 29, 127
Stone, Isaac Scott, 29
Storrs, Melancthon, 29
Stover, Charles, 29
Suppurating bilateral parotitis, 52
Suppuration, pelvic, 356
Suppurative diseases of pelvis, 142
Surgery, abdominal, 285, 376
gall-bladder, 250

Tappey, Ernest Taylor, 29, 115, 130, 263.
Taylor, Hugh McGuire, 30
Taylor, William Henry, 30
Thomas, Charles Preston, 30
Thomas, George Gillett, 30
Thompson, Frank Daniel, 30
Tompkins, Christopher, 30
Tumors, intra-abdominal, 197

Undesirable presentations, 368
Use and abuse of uterine curette, 275
Uterine curette, use and abuse of, 275
Uterus, hyperplastic conditions of, 364
lateral displacements of, 132
retroversions of, 342

Vaginal hystero-salpingo-oöphorectomy in suppurative pelvic disease, 142
Vander Veer, Albert, 30, 330, 383

Walker, Edwin, 30
Ward, Milo Buel, 31, 303
Watkins, T. J., 112
Wenning, William Henry, 31
Werder, Xavier Oswald, 31, 142, 160, 173
Wheaton, Charles Augustus, 31
Winn, John Farmer, 31
Women, pelvic inflammation in, 222
Wright, Adam Henry, 31